

Oracle® Configure To Order

Implementation Manual,

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Oracle Configure To Order Implementation Manual, Release 11i

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Oracle Corporation welcomes your comments and suggestions on the quality and usefulness of this document. Your input is an important part of the information used for revision.

- Did you find any errors?
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If you find any errors or have any other suggestions for improvement, please indicate the document title and part number, and the chapter, section, and page number (if available). You can send comments to us in the following ways:

- Electronic mail: mfgdoccomments_us@us.oracle.com Attn: Oracle Configure To Order

If you would like a reply, please give your name, address, telephone number, and (optionally) electronic mail address.

If you have problems with the software, please contact your local Oracle Support Services.

Preface

Welcome to *Oracle® Configure to Order Implementation Manual, Release 11i*.

This implementation manual assumes that you are using installation notes provided with the media to perform the installation. It does not contain information regarding the installation steps necessary to transfer the Applications from the disbursement media to the computer system.

Once the installation has been completed, this manual may be used to step through the setup and implementation steps required to get Configure To Order functional.

This preface also explains how this implementation manual is organized and introduces other sources of information that can help you.

Intended Audience

This manual is intended for anyone who is interested in Oracle Configure To Order.

About This Manual

This manual contain overviews, as well as task and reference information, for implementing Oracle Configure To Order. This manual contains the following chapters:

Chapter 1 provides an overview of the Oracle Configure To Order product and its integration with other Oracle Applications.

Chapter 2 describes the setup steps required to setup Oracle Configure To Order.

Chapter 3 discusses model items, bills, and routing.

Chapter 4 dicusses purchase pricing for models and supplier communication.

Chapter 5 discusses forecast models and options.
Chapter 6 discusses master schedule models and options.
Chapter 7 discusses entering configured orders.
Chapter 8 discusses check ATP.
Chapter 9 discusses creating configuration items.
Chapter 10 discusses supplying unique configurations.
Chapter 11 discusses Supply to Order Workbench.
Chapter 12 discusses pick release and ship confirm.
Chapter 13 discusses order changes.
Chapter 14 discusses customizing the order processing workflow.
Chapter 15 discusses deactivating configuration items.

Assumptions

This implementation manual, combined with the user's guides listed in the section *Other Information Sources*, should provide you with all the information needed to implement Oracle Configure to Order.

It also assumes you are familiar with the following Oracle Applications:

- Oracle Advanced Planning and Scheduling
- Oracle BOM/ENG
- Oracle Inventory
- Oracle Order Management
- Oracle Planning
- Oracle Purchasing
- Oracle Work In Process

If you have never used these products, we suggest you attend one or more of the Oracle training classes, available through Oracle University. For more information about Oracle Configure To Order and Oracle training, see: *Other Information Sources*.

Do Not Use Database Tools to Modify Oracle Applications Data

Because Oracle Applications tables are interrelated, any change you make using Oracle Applications can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle Applications.

When you use Oracle Applications to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

Consequently, we **STRONGLY RECOMMEND** that you never use SQL*Plus or any other tool to modify Oracle Applications data unless otherwise instructed.

Other Information Sources

Here are some other ways you can increase your knowledge and understanding of Oracle Configure To Order.

Online Documentation

All Oracle Applications documentation is available online on CD-ROM, except for technical reference manuals. There are two online formats, HyperText Markup Language (HTML) and Adobe Acrobat (PDF).

All user's guides are available in HTML, Acrobat, and paper. Technical reference manuals are available in paper only. Other documentation is available in Acrobat and paper.

The content of the documentation does not differ from format to format. There may be slight differences due to publication standards, but such differences do not affect content. For example, page numbers and screen shots are not included in HTML.

The HTML documentation is available from all Oracle Applications windows. Each window is programmed to start your web browser and open a specific, context-sensitive section. Once any section of the HTML documentation is open, you can navigate freely throughout all Oracle Applications documentation. The HTML documentation also ships with Oracle Information Navigator (if your national language supports this tool), which enables you to search for words and phrases throughout the documentation set.

Related User's Guides

Configure To Order shares business and setup information with other Oracle Applications products. Therefore, you may want to refer to other user's guides when you set up and use Oracle Configure To Order.

If you do not have the hardcopy versions of these manuals, you can read them online using the Applications Library icon or Help menu command.

Oracle Advanced Supply Chain Planning, Oracle Risk Optimization, Oracle Global Order Promising, and Oracle Demand Planning User's Guide

This guide contains the information you need to understand and implement Oracle Advanced Supply Chain Planning, Oracle Risk Optimization, Oracle Global Order Promising, and Oracle Demand Planning.

Oracle Applications User's Guide

This guide explains how to enter data, query, run reports, and navigate using the graphical user interface (GUI) available with this release of Configure To Order (and any other Oracle Applications products). This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent processes.

You can access this user's guide online by choosing "Getting Started with Oracle Applications" from any Oracle Applications help file.

Oracle Applications Demonstration User's Guide

This guide documents the functional storyline and product flows for Global Computers, a fictional manufacturer of personal computers products and services. As well as including product overviews, the book contains detailed discussions and examples across each of the major product flows. Tables, illustrations, and charts summarize key flows and data elements.

Oracle Bills of Material User's Guide

This guide describes how to create various bills of materials to maximize efficiency, support customer requirements, improve quality and lower cost for the most sophisticated manufacturing environments. By detailing integrated product structures and processes, flexible product and process definition, and configuration management, this guide enables you to manage product details within and across multiple manufacturing sites.

Oracle Cost Management User's Guide

This guide describes how to use Oracle Cost Management in either a standard costing or average costing organization. Cost Management can be used to cost inventory, receiving, order entry, and work in process transactions. It can also be used to collect transaction costs for transfer to Oracle Projects. Cost Management supports multiple cost elements, multiple subelements, and activity-based costing. It also provides comprehensive valuation and variance reporting.

Oracle Engineering User's Guide

This guide enables your engineers to utilize the features of Oracle Engineering to quickly introduce and manage new designs into production. Specifically, this guide details how to quickly and accurately define the resources, materials and processes necessary to implement changes in product design.

Oracle Inventory User's Guide

This guide describes how to define items and item information, perform receiving and inventory transactions, maintain cost control, plan items, perform cycle counting and physical inventories, and set up Oracle Inventory.

Oracle Master Scheduling/MRP and Oracle Supply Chain Planning User's Guide

This guide describes a variety of tools offered to manage and manipulate demand information for both design and operational phases. You can create forecasts, load these forecasts into master production schedules, and plan your end-items and their component requirements. You can also execute the plan, releasing and rescheduling planning suggestions for discrete jobs and repetitive schedules.

Oracle Order Management User's Guide

This guide describes how to enter sales orders and returns, manage spare parts, sales orders, copy existing sales orders, schedule orders, release orders, plan departures and deliveries, confirm shipments, create price lists and discounts for orders, and create reports.

Oracle Project Manufacturing User's Guide

This guide describes the unique set of features Oracle Project Manufacturing provides for a project-based manufacturing environment. Oracle Project Manufacturing can be tightly integrated with Oracle Projects; however, in addition to Oracle Projects functionality, Oracle Project Manufacturing provides a comprehensive set of new features to support project sales management, project

manufacturing costing, project manufacturing planning, project manufacturing execution and project quality management.

Oracle Purchasing User's Guide

This guide describes how to create and approve purchasing documents, including requisitions, different types of purchase orders, quotations, RFQs, and receipts. This guide also describes how to manage your supply base through agreements, sourcing rules and approved supplier lists. In addition, this guide explains how you can automatically create purchasing documents based on business rules through integration with Oracle Workflow technology, which automates many of the key procurement processes.

Oracle Quality User's Guide

This guide describes how Oracle Quality can be used to meet your quality data collection and analysis needs. This guide also explains how Oracle Quality interfaces with other Oracle Manufacturing applications to provide a closed loop quality control system.

Oracle Work in Process User's Guide

This guide describes how Oracle Work in Process provides a complete production management system. Specifically this guide describes how discrete, repetitive, assemble-to-order, project, flow, and mixed manufacturing environments are supported.

Oracle HRMS User's Guide

This manual explains how to enter your employees. It also explains how to set up organizations and site locations. Even if you do not install Oracle HRMS, you can set up your employees, site locations, and organization using Oracle HRMS forms.

Oracle Projects User's Guide

This guide explains how to set up projects for use in project manufacturing and project accounting.

Reference Manuals

Oracle Technical Reference Manuals

Each technical reference manual contains database diagrams and a detailed description of database tables, forms, reports, and programs for a specific Oracle Applications product. This information helps you convert data from your existing

applications, integrate Oracle Applications data with non-Oracle applications, and write custom reports for Oracle Applications products.

You can order a technical reference manual for any Oracle Applications product you have licensed.

Oracle Manufacturing, Distribution, Sales and Service Open Interfaces Manual

This manual contains up-to-date information about integrating with other Oracle Manufacturing applications and with your other systems. This documentation includes open interfaces found in Oracle Manufacturing.

Oracle Applications Message Reference Manual

This manual describes all Oracle Applications messages. This manual is available in HTML format on the documentation CD-ROM for Release 11.

Oracle Self-Service Web Applications Implementation Manual

This manual describes the setup steps for Oracle Self-Service Web Applications and the Web Applications dictionary.

Installation and System Administration

Oracle Alert User's Guide

This guide explains how to define periodic and event alerts to monitor the status of your Oracle Applications data

Oracle Applications Implementation Wizard User's Guide

If you are implementing more than one Oracle product, you can use the Oracle Applications Implementation Wizard to coordinate your setup activities. This guide describes how to use the wizard.

Oracle Applications Developer's Guide

This guide contains the coding standards followed by the Oracle Applications development staff. It describes the Oracle Application Object Library components needed to implement the Oracle Applications user interface described in the Oracle Applications User Interface Standards. It also provides information to help you build your custom Developer/2000 forms so that they integrate with Oracle Applications.

Oracle Applications Flexfields Guide

This guide provides flexfields planning, setup and reference information for the Configure To Order implementation team, as well as for users responsible for the ongoing maintenance of Oracle Applications product data. This manual also provides information on creating custom reports on flexfields data.

Oracle Applications Installation Manual for Windows Clients

This guide provides information you need to successfully install Oracle Financials, Oracle Public Sector Financials, Oracle Manufacturing, or Oracle Human Resources in your specific hardware and operating system software environment.

Oracle Applications Product Update Notes

If you are upgrading your Oracle Applications, refer to the product update notes appropriate to your update and product(s) to see summaries of new features as well as changes to database objects, profile options and seed data added for each new release.

Oracle Applications Upgrade Preparation Manual

This guide explains how to prepare your Oracle Applications products for an upgrade. It also contains information on completing the upgrade procedure for each product. Refer to this manual and the Oracle Applications Installation Manual when you plan to upgrade your products.

Oracle Applications System Administrator's Guide

This manual provides planning and reference information for the Configure To Order System Administrator.

Other Sources

Training

We offer a complete set of formal training courses to help you and your staff master Oracle Configure To Order and reach full productivity quickly. We organize these courses into functional learning paths, so you take only those courses appropriate to your job or area of responsibility.

You have a choice of educational environments. You can attend courses offered by Oracle University Services at any one of our many Education Centers, or you can arrange for our trainers to teach at your facility. In addition, Oracle training professionals can tailor standard courses or develop custom courses to meet your

needs. For example, you may want to use your organization structure, terminology, and data as examples in a customized training session delivered at your own facility.

Support

From on-site support to central support, our team of experienced professionals provides the help and information you need to keep Configure To Order working for you. This team includes your Technical Representative, Account Manager, and Oracle's large staff of consultants and support specialists with expertise in your business area, managing an Oracle8 server, and your hardware and software environment.

About Oracle

Oracle Corporation develops and markets an integrated line of software products for database management, applications development, decision support, and office automation, as well as Oracle Applications, an integrated suite of more than 45 software modules for financial management, supply chain management, manufacturing, project systems, human resources and sales and service management.

Oracle products are available for mainframes, minicomputers, personal computers, network computers and personal digital assistants, allowing organizations to integrate different computers, different operating systems, different networks, and even different database management systems, into a single, unified computing and information resource.

Oracle is the world's leading supplier of software for information management, and the world's second largest software company. Oracle offers its database, tools, and applications products, along with related consulting, education, and support services, in over 140 countries around the world.

Thank You

Thank you for using Oracle Configure To Order and this implementation guide.

We value your comments and feedback. At the end of this guide is a Reader's Comment Form you can use to explain what you like or dislike about Oracle Flow Manufacturing or this implementation manual.

Send electronic mail to mfgdoccomments_us@us.oracle.com .

Overview of Configure-to-Order Implementation

Topics covered in this chapter include:

- [Overview of Oracle Configure to Order](#) on page 1-3
- [Feature Highlight](#) on page 1-16
- [Examples Used in This Manual](#) on page 1-19

Overview

This Oracle Configure to Order Implementation Manual contains current information about how Oracle ERP products support configure to order capability. It provides detailed implementation consideration for every step of the process.

This manual is organized into the following chapters:

Overview of Oracle Configure to Order

Setup

Model Item, Bills and Routing

Purchase Pricing for Models and Supplier Communication

Forecast Models and Options

Master Schedule Models and Options

Entering Configured Orders

Check ATP

Creating Configuration Items

Supply Unique Configurations

Supply to Order Workbench

Pick Release and Ship Configurations

Order Changes

Customizing the Order Processing Workflow

Deactivate Configuration Items

Overview of Oracle Configure to Order

A Configure to Order environment is one where the product or service is assembled or kitted on receipt of the sales order. Oracle Applications supports the Configure to Order environment with a range of features in order entry, demand forecasting, master scheduling, production, shipping, and financial accounting.

Configure to Order:

- includes Pick-to-Order (PTO) and Assemble-to-Order (ATO) items, models, and hybrids.

- supports building configurations using other configurations as sub-assemblies (multi-level configure to order)

- supports internal sourcing of ATO models at any level of BOM

- supports purchasing of ATO models and items at any level of the BOM

Definitions

Assemble-to-Order Model (ATO Configuration)

Assemble-to-Order model consists of:

- Model bill of material with optional items and option selection rules
- Configuration manufactured from mandatory components and selected options

Assemble-to-Order Item

Assemble-to-Order item consists of:

- Standard bill of material with standard components
- Item manufactured from standard components

There are three types of ATO items:

- **AutoCreated Configuration Items:** Configuration items created by CTO for a sales order which was placed for a model and options. These items have the following attributes:

- The ATO flag checked on the OM tab of the item master

- A "Base Model" defined on the BOM tab of the item master

- The "Autocreated" flag is checked (this is a non-visible flag on the item).

- **Preconfigured Items:** An item defined by the user with a "Base Model" and a configured bill of material. These items have the following attributes:

The ATO flag checked on the OM tab of the item master

A "Base Model" defined on the BOM tab of the item master

- **Standard ATO Items:** These are standard items with the ATO flag checked on the OM tab of the item master.

Pick-to-Order Model (PTO Configuration)

Pick-to-Order model consists of:

- Model bill of material with optional items and option selection rules
- Pick slip used to kit included items and selected options

Pick-to-Order Item (Kit)

Kit consists of:

- Standard bill of material with mandatory included items
- Pick slip used to kit included items

Hybrid

Hybrid consists of:

- Pick-to-Order models with optional Assemble-to-Order items
- Pick-to-Order model containing Assemble-to-Order model

Multi-Level Assemble-to-Order Model (Multi-Level ATO Configuration)

Multi-level Assemble-to-Order model consists of:

- A model bill of material with a non-phantom model as a component.
- Configuration manufactured from mandatory components, selected options, and configured sub-assemblies.

Multi-Level Assemble-to-Order Items

Multi-level Assemble-to-Order item consists of:

- Standard bill of material with standard components and configured components

- Item manufactured from standard components and configured components

Multi-Organization Assemble to Order Model (Multi-Organization ATO)

Multi-Organization Assemble-to-Order model consists of:

- An ATO model which will be manufactured in and transferred from another organization

Process Flows

There are three process flows illustrated here, one for single level, single organization make structures, one for multi-level, multi-organization make structures, and one for a purchased to order configuration.

Example 1: Process flow for Single Level, Single Organization ATO, and PTO

The following diagram illustrates the flow of a single level, single org assemble-to-order sales order. Each numbered step is explained in the table following the diagram, and will be covered in detail in the following chapters.

Figure 1–1 Process Flow for Single Level, Single Organization ATO, and PTO

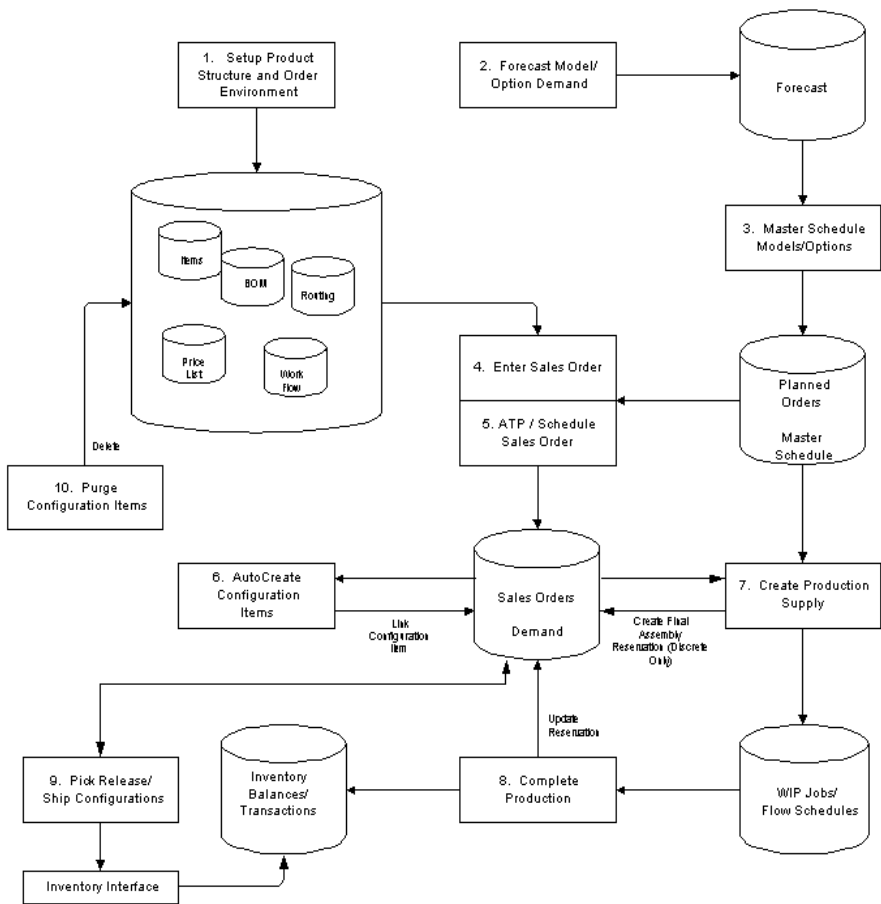


Table 1–1 Single Level, Single Org Process Flow Steps

#	ATO	PTO	Name	Description
1	Yes	Yes	Define Model and Option Class Bills of Material and optionally routings	Define model and option class bills and routings (optional) to control order management, master scheduling/MRP, work in process, and costing.
2	Yes	No	Forecast Model/Option Demand	Forecast demand for model, options, or both. Explode forecasts through planning bills to models and/or options.
3	Yes	No	Master Schedule Models and Options	Master schedule ATO models, options, or both.
4	Yes	Yes	Enter Sales Order	Enter sales orders for models with options.
5	Yes	Yes	Check ATP	Perform group ATP check for all supply-constrained components to find earliest possible ship date for configuration.
	Yes	Yes	Book and Schedule the Order	-
6	Yes	-	AutoCreate Configuration Items	<p>Automatically generate a new item number, bill, and routing for each new sales order and assign new item to sales order.</p> <p>Note : You could also 'progress the order' through 'create config item' in the workflow, which will create the new item, bill and routing for the configuration required for that sales order.</p>
7	Yes	-	Create Production Supply	<p>Discrete: Autocreate Final Assembly Orders automatically opens a discrete job for each new ATO configuration order. These work in process jobs are reserved to the sales orders.</p> <p>Flow: Use the line scheduling workbench to schedule your line based on sales orders. The sales order number is referenced on the flow schedule.</p> <p>Note: you could also "progress the order" through Create Production Supply which will automatically open a discrete job or create a flow schedule for the active configuration order line.</p>

Table 1–1 Single Level, Single Org Process Flow Steps

#	ATO	PTO	Name	Description
8	Yes	-	Complete Production	Complete configuration item to inventory. The work in process reservation or flow schedule reference is automatically converted into an inventory reservation.
9	Yes	Yes	Pick Release and Ship Configuration Orders	Pick Release all configuration sales orders.
10	Yes		Deactivate Configuration Items	Deactivate auto-generated configuration item numbers whose orders are complete more than x days ago.

Example 2: Process Flow for Multi-Level, Multi-Organization ATO, and PTO

NOTE: Oracle Advance planning and Scheduling (APS) must be installed to support Multi level and / or Multi-organization ATO models and ATO items.

The following diagram illustrates the flow of a multi-level, multi-org assemble-to-order sales order. Each numbered step is explained in the table following the diagram, and will be covered in detail in the following chapters.

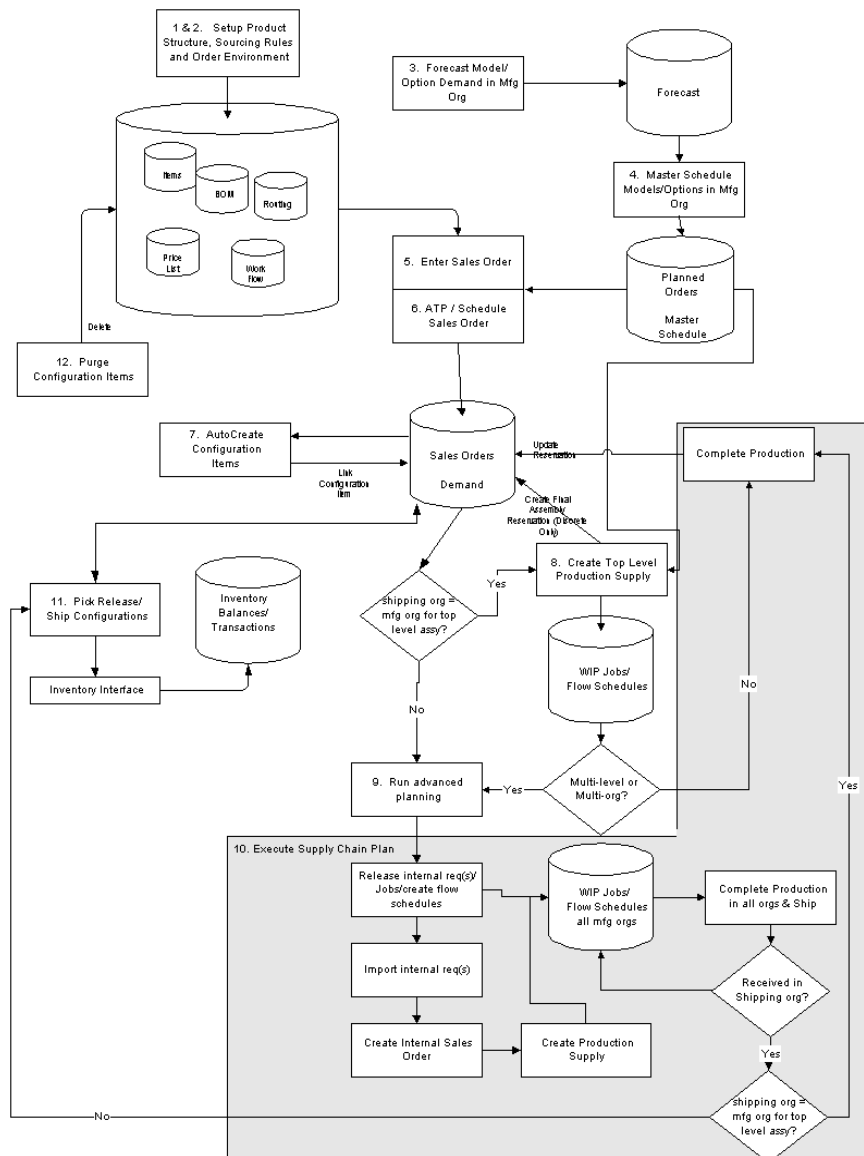
Figure 1–2 Process Flow for Multi-Level, Multi-Organization ATO, and PTO

Table 1–2 Multi Level, Multi Org Process Flow Steps

#	ATO	PTO	Name	Description
1	Yes	Yes	Define Model and Option Class Bills of Material and routings (optional)	Define multilevel model and option class bills and routings (optional) to control order management, master scheduling/MRP, work in process, and costing.
2	Yes	Yes	Set-up sourcing rules, shipping networks, assignments sets, APS plans	Define sourcing rule, shipping networks, assignment sets, ATP rules, and APS plans to control multi-organizational sourcing.
3	Yes	No	Forecast Model/Option Demand	Forecast demand for model, options, or both in the manufacturing organizations. Explode forecasts through planning bills to models and/or options.
4	Yes	No	Master Schedule Models and Options	Master schedule ATO models, options, or both in the manufacturing organizations using the forecast set.
5	Yes	Yes	Enter Sales Order	Enter sales orders for models with options.
6	Yes	Yes	Check ATP	Perform group ATP based on planning output to check for all supply-constrained components to find earliest possible ship date for configuration.
	Yes	Yes	Book and Schedule the Order	-
7	Yes	-	AutoCreate Configuration Items	Automatically generate a new item number, bill, and routing for all non-phantom models in the configuration structure in all potential sourcing organizations. The final configured assembly item is linked to the sales order.

Table 1–2 Multi Level, Multi Org Process Flow Steps

#	ATO	PTO	Name	Description
8	Yes	-	<p>Create Top Level Production Supply</p> <p>In multi-organization, you will be able to create production supply in the shipping organization only if the final assembly is manufactured in that organization.</p> <p>If the shipping organization does not manufacture the final assembly, use advanced planning to recommend supply.</p>	<p>If the final assembly is being shipped from the manufacturing organization itself :</p> <p>Discrete: Autocreate Final Assembly Orders Automatically open a discrete job for the top level item on each new ATO configuration order. These work in process jobs are reserved to the sales order. This process could also create supply for lower level configurations, if they are being built or bought from the same organization.</p> <p>Flow: Use the Line Scheduling workbench to schedule your line based on sales orders. The sales order number is referenced on the flow schedule.</p> <p>Note: you could also “progress the order” through Create Production Supply which will automatically open a discrete job or create a flow schedule for the final assembly item of the active configuration order line. This process could also create supply for lower level configurations, if they are being built or bought from the same organization.</p>
9	Yes	-	Plan lower level configuration supply	<p>In a multi-organization environment:</p> <p>Use advanced planning to generate and implement planned orders across your supply chain.</p>
10	Yes	-	Execute Supply Chain Plan	<p>Complete required manufacturing in the respective source organizations , and ship to the shipping organization.</p> <p>If the shipping organization is the same as the manufacturing organization of the top level configuration item, the work in process reservation or flow schedule reference is automatically converted into an inventory reservation when you complete the top level configuration item to inventory.</p>
11	Yes	Yes	Pick Release and Ship Configuration Orders	Pick Release all configuration sales orders.
12	Yes	-	Deactivate Configuration Items	Deactivate auto-generated configuration item numbers in an organization whose orders are complete more than <i>x</i> days ago. A configuration item will be deactivated if there is no sales order demand, or open supply or transactions in that organization,

Example 3: Process flow for Purchase to Order Configurations

NOTE: Oracle Advance planning and Scheduling (APS) must be installed to support purchasing of ATO items.

The following diagram illustrates the flow of a purchase to order sales order. Each numbered step is explained in the table following the diagram, and will be covered in detail in the following chapters. Note that this assumes the top level configuration is being purchased. If the top level is made and a lower level configuration is bought, the flow would be similar to the multi-level multi-org example, with the lower level production supply being replaced by a purchased supply.

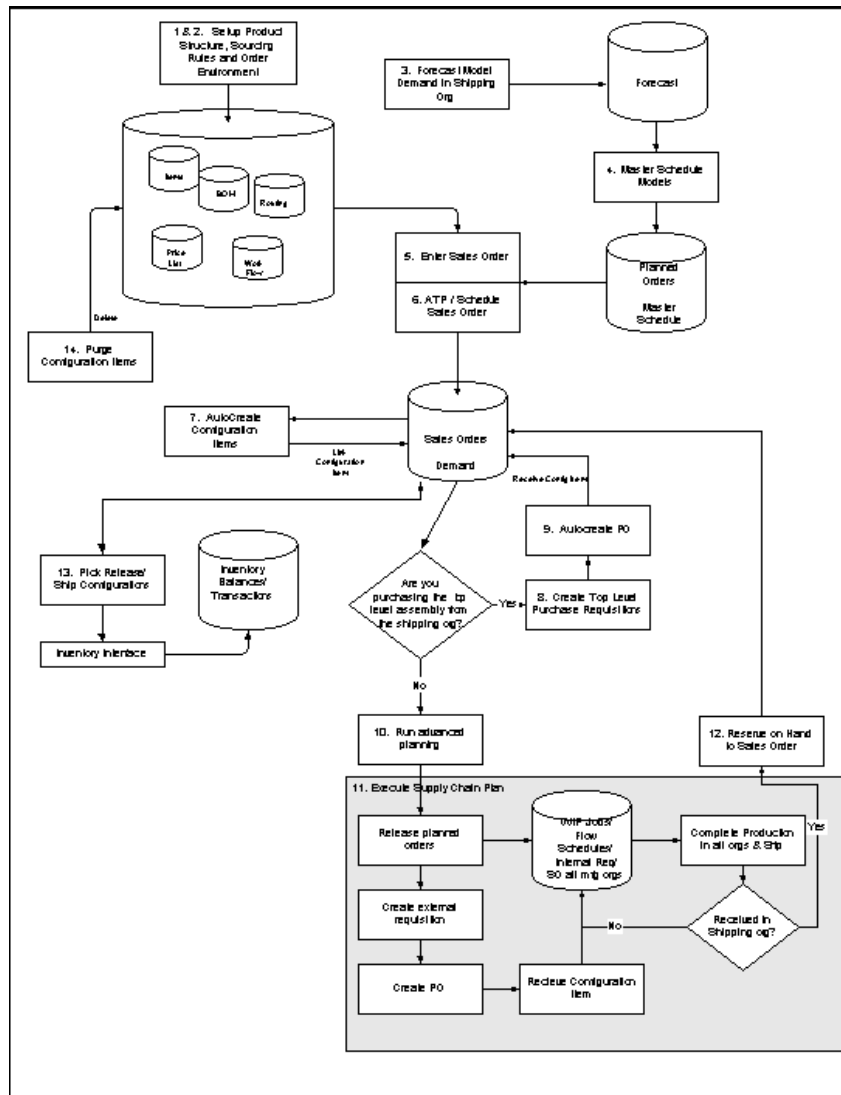
Figure 1–3 Process flow for Purchase to Order Configurations

Table 1–3 Procure to Order Process Flow Steps

#	ATO	Name	Description
1	Yes	Define Model and Option Class Bills of Material and optionally routings	Define single or multilevel model and option class bills and optionally routings to control order management, master scheduling/MRP, work in process, and costing. The entire BOM for a purchased configuration should be created in the validation organizations and receiving organization. Routings for all models and option classes should be created in the receiving organization.
2	Yes	Set-up sourcing rules	Define a buy type sourcing rule for the models you will procure and assign it the assignment set specified in 'MRP: default sourcing assignment set' profile.
3	Yes	Forecast Model Demand	Forecast demand for the ATO model. All components and option classes should have their forecast control set to "none" if you intend to buy the model configuration.
4.	Yes	Master Schedule the Top model	Master Schedule your Top ATO model
5	Yes	Enter Sales Order	Enter sales orders for models with options.
6	Yes	Check ATP, Book and Schedule the Order	Perform group ATP based on planning output to back off the lead time of the model for a promise date.
7	Yes	AutoCreate Configuration Items	Automatically generate a new item number, bill, and routing for all non-phantom models in the configuration structure. The BOM and routing are created in the receiving organization. The final configured assembly item is linked to the sales order.

Table 1–3 Procure to Order Process Flow Steps

#	ATO	Name	Description
8	Yes	Create Top Level Purchase Requisitions In multi-organization scenario, you will be able to create requisition supply only if the final assembly is purchased from that organization. If the shipping organization does not purchase the final assembly, use advanced planning to recommend planned orders.	If the final assembly is being purchased directly from the shipping organization : Autocreate Purchase Requisitions automatically places a row in the req import tables for the top level purchased configuration or ATO item. Run Req import to create the requisitions. These requisitions are reserved to the sales order. Note: you could also “progress the order” through Create Supply Order Eligible which will also place a line in the req import tables for the order line.
9	Yes	Create Purchase Orders	Create purchase orders or purchase order releases
10	Yes	Plan configuration supply	Use advanced planning to generate and implement planned orders if you are purchasing lower level configurations, or you are purchasing from an organization other than your shipping organization.
11	Yes	Execute Supply Chain Plan	Generate requisition and purchase order for the configuration item. Receive it into stock.
12	Yes	Reserve configured item to sales order	Prior to pick release, you will need to reserve the configured item to the sales order.
13	Yes	Pick Release and Ship Configuration Orders	Pick Release all configuration sales orders.
14	Yes	Deactivate Configuration Items	Deactivate auto-generated configuration item numbers in an organization whose orders are complete more than x days ago. A configuration item will be deactivated if there is no sales order demand, or open supply or transactions in that organization.

Feature Highlight

The following is a list of key Configure to Order features supported by Oracle Applications:

Product Definition

- Support for assemble-to-order (ATO), pick-to-order (PTO) and hybrid (PTO/ATO, ATO/ATO) product structures
- Support for Multi-level ATO and PTO-Multi-level ATO hybrids structures, which enables building configured items which have other configured items as sub-assemblies
- Ability to ship configured items from a warehouse
- Ability to purchase configurations at any level in your multi-level BOM structure.
- Planning support for complex configurations where lower level configurations are sourced across the supply chain.
- Mandatory and mutually exclusive option selection rules
- Option dependent routings
- Notification to the shipping organization when a change is made to the order request day, ship date, quantity, or configuration after the configuration item has been created.

Planning Configurations

- Forecast any planned item, anywhere on your bill of material, including models, options, and mandatory components, if your configurations are made in-house. Maintain and consume these forecasts in the manufacturing organizations. (in-line forecast consumption)
- Use forecast sets as demand schedule for the manufacturing plan and use a manufacturing plan for ATP/Scheduling and planning supply
- Use Advanced Planning and Scheduling (APS) to check availability, schedule and plan supply across organizations
- Use constraint based planning to generate feasible plans based on material and capacity constraints
- Master schedule models and options in the manufacturing organizations.
- Define sourcing rule for models and options at any level in the BOM

Ordering Configurations

- Interactive option validation/auto-selection using Oracle Configurator
- Multiply instantiate ATO models and sub-models using Oracle Configurator
- ATP inquiry across the supply chain based on option material and resource availability
- Match and re-use an ordered configuration or a configured subassembly
- Reserve to available onhand configuration (partial or full)
- Automatic configuration pricing calculation taking discounts account
- Order capture from any source (e.g. your web store)
- Workflow based order processing

Manufacturing Configurations

- Automatic creation of unique configuration item, BOM, and routing for the top level model as well as lower level models. These are created in all the required organizations, based on sourcing information.
- Discrete manufacturing and flow manufacturing environment support for building all levels of the configuration.
- Supply chain cost roll up support for all sourced configurations.
- Automatic configuration lead time and cost calculation for all configured subassemblies and top level assemblies.
- Automatic final assembly work order creation for the top-level configuration (discrete manufacturing , single organization environment only).
- Constraint based finite scheduling of final assembly work orders within each manufacturing organization.
- Automatic flow schedule creation for the top-level configuration (flow manufacturing, single organization environment only).
- Automatic sales order reservation of top-level configuration upon production completion (single organization environment only).
- Supply chain planning support to create supply for configurations at all levels across the supply chain.

Procuring Configurations

- Automatic creation of unique configuration item, BOM, and routing for the top level model as well as lower level models. These are created in the receiving organization of the Top 'Procured' ATO model.
- Calculation of List Price and Blanket Price for the configuration based on prices for the model and options.
- Transmission of configuration details via item attachments or the iSupplier Portal
- Automatic requisition creation for the top-level purchased configuration
- Automatic transfer of the reservation from the requisition to the purchase order
- Automatic sales order reservation of top-level purchased configuration upon receipt into inventory
- Supply chain planning support creation of supply for configurations at all levels across the supply chain.
- Support for dropshipped configurations

Integration

The following Oracle Application products are integrated to provide Configure to Order features:

- Bills of Material
- MRP/MPS, SCP
- APS (required for multi-level or multi-organization configurations)
- Order Management products
- Configurator products
- Work in Process
- Inventory
- Flow Manufacturing
- Cost Management
- Purchasing
- iSupplier Portal

Examples Used in This Manual

Two examples are used in this manual to illustrate the difference between single level/single organization and multi-level/multi-organization configure to order. Follow the example that best suites your manufacturing environment.

Example 1. A hybrid (PTO/ATO) in the single level, single organization environment

The following is an example of a hybrid (PTO/ATO) in the single level, single organization environment. It is for a PTO Model "Promotional Laptop" that has three pickable items: Diskettes, a Battery Pack, and the Laptop Computer ATO Model. The Laptop Computer Model is comprised of a phantom model for a Monitor, option classes for CPUs, VGAs, and EGAs, and the actual options. It is first shown as a diagram, then in a tabular format. It is used throughout the entire book for illustration.

Figure 1–4 A hybrid (PTO/ATO) in the Single Level, Single Organization Environment

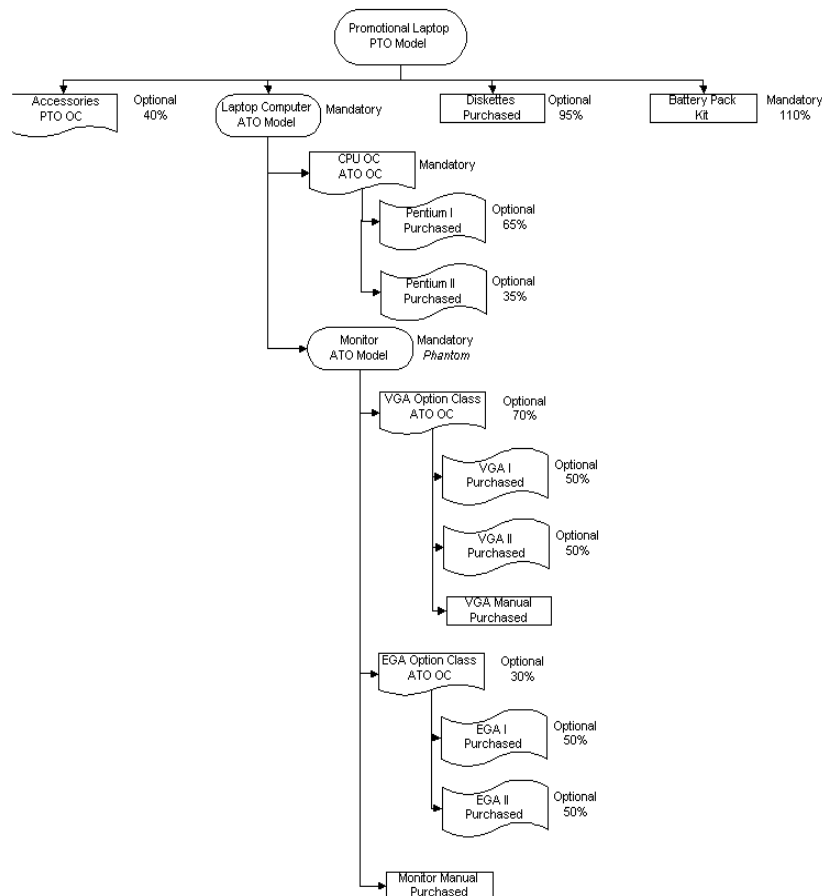


Table 1–4 A hybrid (PTO/ATO) in the Single Level, Single Organization Environment

Level	Item	Item Type	Optional	Supply Type	Planning %	Qty	Mutually Exclusive
1	Promotional Laptop	PTO Model	-	-	-	-	-
.2	. Battery Pack	Kit	No	Assembly Pull	110%	-	-
.2	. Accessories	PTO Option Class	Yes	Assembly Pull	40%	-	No
.2	. Diskettes	Purchased Item	Yes	Assembly Pull	95%	-	-
.2	. Laptop Computer	ATO Model	No	Assembly Pull	100%	-	-
..3	.. CPU	ATO Option Class	No	Phantom	100%	-	Yes
...4	... Pentium I	Purchased	Yes	Assembly Pull	65%	-	-
...4	... Pentium II	Purchased	Yes	Assembly Pull	35%	-	-
..3	.. Monitor	ATO Model	No	Phantom	100%	-	No
...4	... VGA	ATO Option Class	Yes	Phantom	70%	-	No
....5	.... VGA Manual	Purchased Item	No	Assembly Pull	100%	-	-
....5	.... VGA1	Purchased Item	Yes	Assembly Pull	50%	-	-
....5	.... VGA2	Purchased Item	Yes	Assembly Pull	50%	-	-
...4	... EGA	ATO Option Class	Yes	Phantom	30%	-	No
....5	.... EGA1	Product	Yes	Assembly Pull	55%	-	-
....5	.... EGA2	Product	Yes	Assembly Pull	45%	-	-
...4	... Monitor Manual	Purchased Item	No	Assembly Pull	100%	-	-

Example 2: A multi level ATO in a multi-organization environment

The following is an example of a hybrid (PTO/ATO) in a multi-level, multi-organization environment. It uses the same PTO Model "Promotional Laptop" that has three pickable items: Diskettes, a Battery Pack, and the Laptop Computer ATO Model. However, now the Laptop Computer Model is sourced for another organization, and the monitor model has been made non-phantom and is sourced from a third organization.

In summary, the original structure is changed in the following ways:

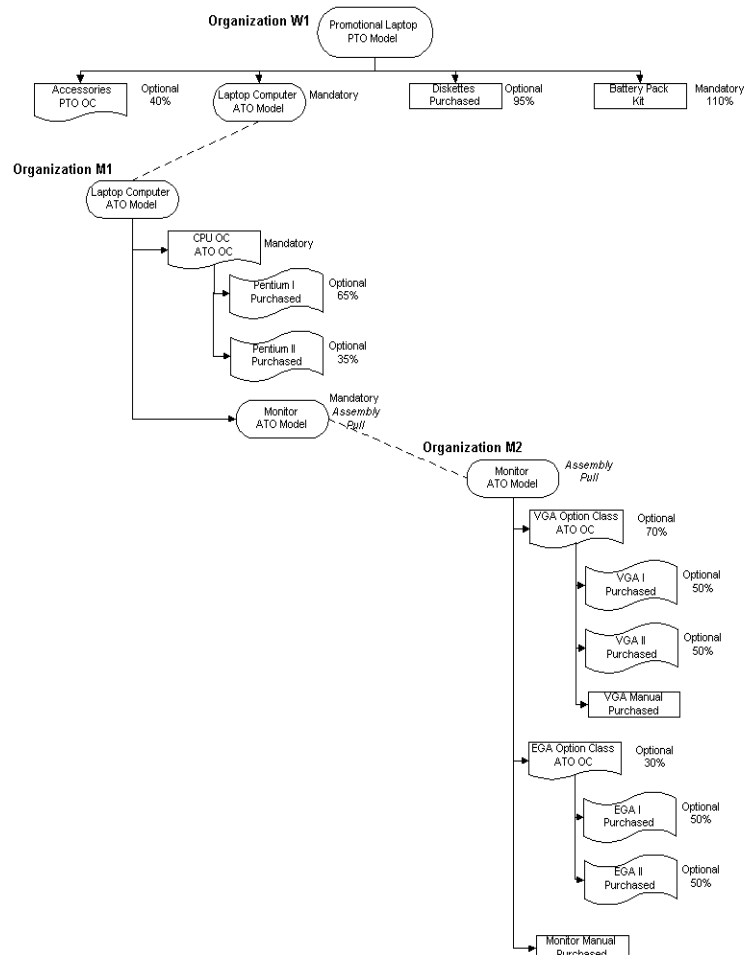
- The orders are placed in organization W1 (your warehouse)

- The Laptop Computer is made in organization M1

- The Monitor sub-model is changed to Assembly Pull (from phantom) and is made in organization M2

- There are sourcing rules set up such that W1 gets the laptop from organization M1, and M1 gets its monitors from M2.

The illustration is of the BOM in the three organizations, W1, M1, & M2. The BOM in the OM validation organization would contain all models and options. It is used throughout the entire book for easy illustration.

Figure 1–5 A Multi Level ATO in a Multi-organization Environment

Note that if the Monitor Model was bought instead of made, the entire Monitor Model BOM should reside in the receiving organization (M1).

Topics covered in this chapter include:

- [Profiles](#) on page 2-7
- [Setup for Configuration Line Workflow](#) on page 2-12
- [Planning Set-up Considerations in a Multi-level, Multi-organization scenario](#) on page 2-13
- [Description of Custom CTO Packages](#) on page 2-14

This section describes key parameters, profiles, and set-up considerations that are pertinent to the CTO functionality.

Parameters

BOM Parameters

The following table lists the fields in the BOM Parameters form that are relevant to configurations.

Table 2–1 BOM Parameters

Field Name	Value	Usage Notes
Create Lower Level Supply	You can choose one of the following values: No Auto-created Configuration items only ATO items and Auto-created Configuration Items	<p>This parameter is used to indicate whether or not the system should create supply for lower level configurations and ATO items when progressing an order on-line in order management, or when using the Autocreate FAS batch program.</p> <p>If set to No, the system will create supply only for the top level ATO item or configuration. This is the default value for this parameter.</p> <p>If set to Auto-created Configuration items only, it will create supply for any lower level configuration that was generated because of the specific sales order configuration. Note that it will NOT create supply for any lower level configuration that was matched to a preconfigured item.</p> <p>If set to ATO items and Auto-created Configuration Items, it will create lower level supply for all ATO items, preconfigured items and autocreated configured items. Note that supply will be created even for ATO items setup as standard Mandatory components on the model Bill. This option should be used only if you do not expect to have on hand for your ATO items and preconfigured items.</p>

Table 2–1 BOM Parameters

Field Name	Value	Usage Notes
Inactive Status	The list of value consists of all the item statuses that are defined in the system.	The Deactivate Configuration Items program sets item status of configuration items to this value.
Numbering Segment	The list of value consists of all the item segments.	<p>The item field is a flexfield that may contain multiple segments. Let's say you have a two segment item field. The two segments are Item-Group. Item, Group will show up in the LOV. The segment you choose here will be the field that the 'Numbering Method' applies.</p> <p>NOTE: The numbering segment parameter must be set in the OE validation organization. The setting in all other organizations will be ignored</p>
Numbering Method	<p>You can choose one of the following values:</p> <p>Append with sequence</p> <p>Replace with sequence</p> <p>Replace with order, line number, shipment #</p> <p>User defined</p>	<p>Using the above example, let's say you choose the Item segment in the Numbering Segment. For an ATO model CN97444-Laptop, the configured item number will be the following for each Numbering Method:</p> <p>CN97444*1236-Laptop</p> <p>1236-Laptop</p> <p>45623*1*1-Laptop (45623 is the sales order number, 1 is the line number, 1 is the shipment number.)</p> <p>User defined: The user defined method can be used to generate customized numbering for configuration items. Customized method can be implemented in the packages BOMCFGL.pls and CTOCUCNB.pls. For details on how to use these packages see Description of Custom CTO Packages.</p> <p>NOTE: The numbering method parameter must be set in the OE validation organization. The setting in all other organizations will be ignored</p>

WIP Parameters

The following table lists the field in the WIP Parameters window that is relevant to configurations.

Table 2–2 WIP Parameters

Field Name	Value	Usage Notes
Respond to Sales Order Changes	You can choose one of the following values: Never Always When linked 1 to 1	This parameter determines whether or not a work order that is reserved to a sales order will be put on hold after a configured item is de-linked from a sales order line or the order is put on hold. Never: The work order(s) will not be put on hold if you de-link the configured item from the sales order or the sales order is put on hold. Always: The work order(s) will be put on hold if you de-link the configured item from the sales order or the sales order is put on hold. When linked 1 to 1: The work order will be put on hold if it is the only work order reserved to the sales order. Note: Work Orders will be linked to sales orders if the shipping organization is the same as the manufacturing organization. In addition, in a multi-level environment, only the top level configuration work order would be linked to the sales order.
Default Discrete Class	-	You must have a default discrete class defined in your manufacturing organizations or Autocreate FAS and create flow schedules will fail.

Order Management Parameters

The following table lists the field in the Order Management Parameters window that is relevant to configurations.

Table 2–3 OM Parameters

Field Name	Value	Usage Notes
Item Validation Organization	The list of value consists of all the organizations that are defined in the system.	<p>In Order Management, the Item Validation Organization parameter indicates the Oracle Manufacturing organization against which items are validated. You must define all transactable items (models, option classes and options) in this organization.</p> <p>Caution: If you maintain your bills of material in any organization other than the Item Validation Organization, you need to ensure the consistency between the bills. A common practice is to set-up the bill in the item primary manufacturing organization, then common it in all other organizations that need to use it.</p> <p>If an Operating Unit has multiple OE responsibilities, then those OE responsibilities must have the same OE validation organization in order for AutoCreate Configuration to work properly.</p> <p>See the <i>Oracle Order Management User's Guide</i> for more information on setting up the item validation organization.</p>

Profiles

BOM: Match to Existing Configurations

This profile controls whether a match is performed during AutoCreate Configuration, Create Configuration Item workflow activity, and Match from Sales Order Pad. If the profile value is Yes, then a match is performed; if it is No, then a match is not performed.

BOM: Automatic Reservations

Determines whether or not CTO will attempt to reserve available on-hand when matching during autocreate configuration item batch or on-line mode. If it is set to yes, and the program has found a match, and the schedule date is within the number of days defined by the profile OM : Reservation Time Fence, autocreate config will attempt to reserve any quantity available on hand.

BOM: CTO Default Blanket PO Release Method

This profile is used to set the release method on the ASL created for the configuration. PDOI will use this value to set the release method on the ASL created for the configuration. Values are:

Automatic Release/Review

Automatic Release

Release using Autocreate

Please see the *Oracle Purchasing User's Guide* for more on release method on ASLs.

BOM: Buy Cost Type for Configurations

This profile determines the Buy Cost Type that will be used during the Configuration Cost Rollup. Please see Chapter 9 for details of the cost roll-up calculation.

BOM: Use OM Validation Org When Pre-Configuring Single Level Items

This profile will allow users to decide whether to access the configurator UI published to the OM validation org or the current org when preconfiguring single level items. When the profile is set to 'Yes', the configurator will be called using the OM validation org as the context org for single level configurations, irrespective of the current org from which the BOM form was opened. When the profile is set to No, configurator will be called using the current Org as context org for single level

configurations. Note that the OM Validation Org is always used as the context org for multi-level configurations. In general, this profile should be set to Yes.

BOM: Use Custom Match Function

This profile controls whether the match performed uses the standard match function or a custom match function. If the profile value for Match to Existing Configurations is No, then the value of this profile does not matter since a match is not performed. If Use Custom Match Function is set to yes, CTO calls the function CTO_CUSTOM_MATCH_PK (file CTOCUSMB.pls), instead of our standard match program.

The above two profiles replace profile BOM: Check for Duplicate Configuration used in Release 10.7 and 11.

The following table summarizes the relationship between these two profiles:

Table 2–4 Match Profile Relationship

Match to Existing Config	Use Custom Match	Result
No or NULL	No or NULL	No match is performed
No or NULL	Yes	No match is performed
Yes	No or NULL	Match using standard match
Yes	Yes	Match using custom match

BOM: Configuration Item Delimiter

When you choose any numbering method other than 'User Defined,' Append with sequence, or Replace with Order, line number Numbering Method, the system inserts a delimiter before the sequence number or between the sales order number and line number. You use this profile to define the delimiter to be used by the system.

Anything may be entered as the delimiter character. Do not choose the same delimiter as the item segment delimiter if you have multi-segment item number. It will cause configuration item process to fail.

BOM: Configuration Item Type

This profile indicates the user item type of the new configuration items created by the Create Configuration Item program. A typical setting is ATO item.

BOM: Inherit Option Class Operation Sequence Number

This profile controls whether components within the model structure inherit the operation sequence from their parent option class or model. The list of values is Yes or No. When the profile is set to Yes, Bills of Material applies inheritance logic for all items in the model structure with an operation sequence defaulted to 1.

In the example below, the profile option is set to yes, and the CPU and Monitor option class items have operation sequence numbers for the Laptop Computer routing. The processor options are defaulted to an operation sequence of 1, and inherit operation sequence 30 from the CPU option class item. The VGA Option class, options and included item are defaulted to an operation sequence of 1, and then inherit operation sequence 40 from the manual option class item. Routings are not required for the CPU, Monitor, and VGA option classes.

Table 2–5 BOM: Inherit Option Class Operation Sequence Number Example

Level	Item	Item Type	Op Seq	Operation Sequence Inherited
. 2	. Laptop Computer	ATO Model		
.. 3	.. CPU	Option Class	30	Retains 30
... 4	... Pentium I	Option	1	Inherits 30
... 4	... 486 Processor	Option	1	Inherits 30
.. 3	.. Monitor	Option Class	40	Retains 40
... 4	... VGA	Option Class	1	Inherits 40
.... 5	.... VGA Manual	Included Item	1	Inherits 40
.... 5	.... VGA1	Option	1	Inherits 40
.... 5	.... VGA2	Option	1	Inherits 40

BOM: Perform Lead Time Calculations

In a discrete manufacturing environment, you have the option to calculate the lead time for the configured item when you run AutoCreate Configurations concurrent program. The value of this profile defaults to the Perform Lead Time Calculations parameter of AutoCreate Configurations concurrent program. The list of values is Yes or No. Lead time is not calculated if the configuration item has a flow routing, regardless of this profile.

BOM: Model Item Access

Indicates whether a holder of this responsibility can define and update bills of material for model and option class items.

BOM:Configurator URL

In order to pre-configure items using BOM, this profile must be set to the proper URL for the configurator in your instance. For more information on pre-configuring an item, please see Chapter 8, Preconfiguring Items.

INV: Capable to Promise

This site level profile option determines which ATP program will be used for ATP Check. To perform ATP calculations for multi-level and/or multi-organization configuration structures, this profile option must be set to 'ATP/CTP based on planning output'. This option uses data from the Planning Data Store and lets you obtain multi-level supply-chain ATP results from a plan.

For more information on the Global ATP Server, see of the Oracle Global ATP Server chapter of the Oracle ASCP and *Oracle Global ATP Server User's Guide*

MRP: Default Sourcing assignment

This profile option determines the sourcing assignment set that CTO will use to assign sources to models. This must be set if models need to be sourced. This assignment set must also be assigned to the ATP-enabled plans in all sourcing organizations.

Any sourcing rules and assignments on models will be ignored if this profile is not set.

OM: Use configurator

This profile option determines whether the configurator window or the order management options window is used to select the options for all ATO and PTO Models (SL, ML) entered in order management.

Use the configurator window when you want to set-up validation rules, or you want to use the java interface to choose your options. Use the forms based options window when you do not need validation rules, just need to select options.

Note: You must use the configurator when in Order Management if the order is originally configured using the configurator via I-Store or another interface.

See the *Oracle Order Management User's Guide* for more information on the options window.

OM: Included Item Freeze Method

Controls when PTO included items are displayed in Order Management. Values are Entry, Booking, and Shipping.

OM: Reservation Time Fence

This profile option controls automatic reservations during scheduling. The profile option represents the number of days into the future that scheduling will reserve.

The default value is Null which means that scheduling will not automatically reserve. This profile option is used during autcreate config if the BOM: Automatic Reservations = 'Yes'

WSH: Retain ATO Reservations

This profile option controls whether or not reservations will be maintained when backordering an ATO item or Model.

If the profile is set to Yes, then reservations will not be removed for backordered ATO items/Models, but will be updated to Unstaged.

If the profile is set to No, then the delivery detail status will be changed to 'N' (Not Ready to Release) and reservations will be deleted. Note that you will lose the ability to track that this item was backordered and these items will not show up on the 'Backorder Detail report' or the 'Backorder Summary report.'

Setup for Configuration Line Workflow

The AutoCreate Configuration process creates a configuration item for the models, option classes and options that you have selected. At the end of the AutoCreate Configuration process, the configuration item is linked to the sales order by adding a new order line to the sales order. You must assign the Configuration Line Workflow to the order line type you are using to process the rest of the CTO workflow properly.

To assign the Configuration Line Workflow to the order line type:

(N) Order Entry > Setup > Transaction Types > Define

1. Query the Transaction Type corresponding to your ATO Model order type.
2. Click Assign Line Flows. This will open the Line Workflow Assignments form.
3. Create a line workflow assignment with the following values :

Line Type = Your order line type

Item Type = Configured Item

Process Name = Line Flow - Configuration.

See the *Using Oracle Workflow in Oracle Order Management User's Guide* for more information on the setting up workflows.

Planning Set-up Considerations in a Multi-level, Multi-organization scenario

APS must be used in a multi-level or multi-organization environment.

ATP Considerations

- All models and their components must be assigned to an ATP enabled plan that is associated with the default sourcing assignment set.
- Use a forecast set as the demand schedule for the plan. Plans based on MDS are not supported for multi-level or multi-organization configurations.
- A Full or Net change collection must be run if there is a change in Items, BOMs, supply, or sourcing rules - even if the items changed are not ATPable.
- Planning must be re-run after each collection.
- Forecast for models should be set-up in the manufacturing organization. For multilevel / multi-organization structures, planned orders will consume the forecast in the manufacturing organization (in-line) Forecasts in the distribution organization will not be consumed.
- For more information on Planning in a multi-level, multi-org environment, please see the *Oracle Advanced Planning and Scheduling User's Guide* section "CTO enhancements."

BOM Considerations

The decision as to whether or not to create a config item for a lower level model is determined by the BOM supply type on the lower level model in the item validation organization.

If the supply type is set to phantom, no configuration item will be created during autcreate config, and the model and all it's components will become part of the top level configuration BOM. It is treated as a single level configuration.

If the supply type is set to anything other than phantom, auto create config will create a configuration item for that model and only the config item will appear on the parent configuration item BOM.

Description of Custom CTO Packages

Catalog Descriptions of Multi-Level Models

By default CTO creates catalog descriptions for a configuration item using the values of descriptive elements of its components. For multilevel configurations, description of parent configuration does not roll-up the description from child configurations.

CTO provides a custom package "CTO_CUSTOM_CATALOG_DESC" to allow customers to create custom catalog descriptions. Details of the package are as follows:

File Name: CTOCUCLS.pls (Package Specification), CTOCUCLB.pls (Package Body)

Package Name: CTO_CUSTOM_CATALOG_DESC

Procedure Name: user_catalog_desc

You can alter the default behavior in two ways :

1. Change the Return Value of this function to 'Y' in order to roll up the description of the child models to the parent models.
2. Add custom code and change the return value of this function to 'C' to get a customized description.

user_catalog_desc has 3 parameters

- p_params IN
- p_catalog_dtls IN OUT
- x_return_status OUT

p_params is a record-type and contains the following 2 elements:

- p_item_id number (inventory item id of the configuration item)
- p_org_id number (organization id)

p_catalog_dtls is a table of records which contains the following 2 elements:

- cat_element_name varchar2(30)
- cat_element_value varchar2(30)

p_catalog_dtls(i).cat_element_name will contain the element name in its "i"th index.

You need to update `p_catalog_dtls(i).cat_element_value` with an appropriate value of corresponding `cat_element_name`.

`x_return_status` is the OUT parameter which should be set to one of the following values:

`FND_API.G_RET_STS_SUCCESS` to indicate success

`FND_API.FND_API.G_RET_STS_ERROR` to indicate failure with expected status

`FND_API.FND_API.G_RET_STS_UNEXP_ERROR` to indicate failure with unexpected status

Copy Category Sets

As Standard functionality, CTO adds the configuration item to all category sets to which its base model belongs, except the 'Sales and Marketing' category. CTO provides a customizable package to enable users to add the configuration item to 'Sales and Marketing' category sets, if needed. Details of the package are as follows:

File Name: `CTOUCTS.pls` (Package specification), `CTOUCTB.pls` (Package body)

Package Name: `CTO_CUSTOM_CATEGORY_PK`

Function Name: `COPY_CATEGORY`

Function `copy_category` has following parameters:

`Pcategory_set_id` in Number,

`Porganization_id` in Number

It returns value 1 (add to category set) or 0 (Do not add to category set)

You can add the configuration item to 'Sales and marketing' category by changing the return value of the package to 1. By default, the package returns 1 for all category sets except sales and mktg category set. Alternatively, you can choose NOT to add config to another category set by changing the return value to 0.

Note: Copying the sales and marketing category to the configuration item will make the configuration item available to users in all CRM applications, including Sales Opportunities. Generally, this should NOT be copied.

Custom Numbering Method

CTO provides three standard configuration numbering methods and a custom user defined numbering method. CTO provides two packages for the custom numbering method to allow users to use custom numbering for both sales order created and preconfigured items.

To generate custom numbers for configurations created from sales orders, add your custom code to the BOMPCFGI package. Details of the package are as follows:

File Name: BOMCFGIB.pls

Package Name: BOMPCFGI

Function Name: user_item_number

Function user_item_number accepts model_line_id as input parameter and returns name of the item in varchar2.

To generate custom numbers for lower level configurations of preconfigured items, add your custom code to CTO_CUSTOM_CONFIG_NUMBER package. Details of the package are as follows:

File Name: CTOCUCNB.pls

Package Name: CTO_CUSTOM_CONFIG_NUMBER

Function Name: USER_ITEM_NUMBER

Function USER_ITEM_NUMBER has following parameters :

Model_item_id in Number,

Model_line_id in Number,

Param1 inVarchar2

Param2 inVarchar2

Param3 inVarchar2

Param4 inVarchar2

Param5 inVarchar2

Input parameters param1 to param5 are for future use.

If you want to use the same numbering logic for both sales order and preconfigured cases, you should put all custom code in CTOCUCNB.pls. Then create code in BOMCFGIB.pls calling CTO_CUSTOM_CONFIG_NUMBER.user_item_number

(model_line_id => model_line_id,model_item_id => null);

Note: If you want to have different logic for autocreate and pre-config cases, you can still achieve it by putting all custom logic in CTOCUCNB.pls, since the input to the API will be different. For autocreate cases, model_line_id parameter will be NOT NULL and model_item_id will be NULL. For pre-config cases, model_line_id parameter will be NULL and model_item_id will be NOT NULL.

Custom Purchase Price Roll-ups

By default, CTO calculates both list price and blanket prices for purchased configurations. CTO provides two custom packages to allow users to modify the way the price roll-up is done.

CTO_CUSTOM_LIST_PRICE_PK.get_list_price can be used to implement customized buy price calculation that will be inserted in the list price of the configuration instead of the rolled-up price otherwise calculated by the system. Details of the package are as follows:

File Name: CTOCULPB.pls

Package Name: CTO_CUSTOM_LIST_PRICE_PK.

Function Name: get_list_price

Function get_list_price has following parameters

- PmodelLineId in Number,
- PinventoryItemId in Number, -- model's inventory_item_id
- PorganizationId in Number

And returns the price as a number.

CTO_CUSTOM_PURCHASE_PRICE_PK.Get_Purchase_price can be used to implement customized buy price calculations based on vendor, vendor site (there must be a valid ASL defined for the vendor, vendor site). This price calculation will be done instead of the standard blanket price roll-up.

File Name: CTOCUPPB

Package Name: CTO_CUSTOM_PURCHASE_PRICE_PK

Function Name: .Get_Purchase_price

Function Get_Purchase_price has following parameters:

P_item_id in Number,
P_vendor_id in Number,
P_Vendor_site_id in Number

This is a boolean function.

If this function is taking care of creating vendor based price it should return 'TRUE', otherwise it should return false. By default it will always return FALSE.

Note: If this function returns 'TRUE' it is assumed that the vendor based price calculation and creating blanket or other document is done by this procedure.

Match Configurations

Cto_custom_match_pk can be used to customize the logic to be used for finding matches to existing configurations. Details of the package are as follows:

File Name: CTOCUSMB.pls

Package Name : CTO_CUSTOM_MATCH_PK

Procedure Name: .find_matching_config

Function find_matching configurations has following parameters

- pModelLineId in Number,
- xMatchedItemId out Number,
- xErrorMessage out Varchar2
- xMessageName out Varchar2
- xTableName out Varcahr2

If the function succeeds, it should return the inventory_item_id of the matched item should be returned in xMatchedItemId. If the function fails other out parameters can be used to return the details of the error.

Model Items, Bills, and Routing

Topics covered in this chapter include:

- [Model Items, Bills, and Routing](#) on page 3-2
- [Items Setup](#) on page 3-2
- [Model and Option Class Bills of Material](#) on page 3-6
- [Model and Option Class Routing](#) on page 3-8
- [Cataloging Configurations](#) on page 3-12
- [Configuration Rules](#) on page 3-14

Model Items, Bills, and Routing

This section describes item, bills of material, and routing features for models and option classes. It also describes the features of cataloging configurations and configuration rules.

Items Setup

Several key item attributes are central to ensure correct processing of a configure-to-order sales order. The following table highlights these attributes and their typical setting.

Table 3–1 Item Attributes

Attribute	PTO Model	PTO Option Class	ATO Model	Option Class	ATO Item	Option (Component)
BOM Item Type	Model	Option Class	Model	Option Class	Standard	Standard
BOM Allowed	Yes	Yes	Yes	Yes	Yes	Yes
Planning Method	Not Planned	Not Planned	MPS Planning	MRP Planning	MRP	MRP
Forecast Control	Consume	Consume & Derive	Consume and Derive	Consume if you have your option class routings commoned to your model. Consume and Derive if your option classes have their own routings. None if it belongs to a Purchase model.	Consume	Consume & Derive if manufacturing model, None if purchasing model

Table 3–1 Item Attributes

Attribute	PTO Model	PTO Option Class	ATO Model	Option Class	ATO Item	Option (Component)
Build in WIP	No	No	No	No	Yes, if using our autocreate program to generate supply - even if it is a buy item. Otherwise, it depends.	(depends)
OE Transactable	Yes	Yes	Yes	Yes	Yes	Yes
Check ATP	No	No	No	No	(depends)	(depends)
ATP Components	(depends)	(depends)	(depends)	(depends)	(depends)	(depends)
Assemble to Order	No	No	Yes	Yes	Yes	No
Pick Components	Yes	Yes	No	No	No	No

Table 3–1 Item Attributes

Attribute	PTO Model	PTO Option Class	ATO Model	Option Class	ATO Item	Option (Component)
Ship Model Complete	Yes or No (only applicable for PTO model)	n/a	n/a	n/a	n/a	n/a
Purchased/purchasable	No	No	Yes if you will be purchasing the model	Yes if you will be purchasing the model	Yes if you will be purchasing the ATO item	Yes if you will be purchasing the model
Lot/Serial Control	No	No	Yes, if you want the configuration to be lot/serial controlled. NOTE: Serial Control of "Unique within Item" will mean "Unique within base Model" for configurations.	No, unless you want to set the default serialization starting operation sequence number for the configuration based on the option class routing.	Depends	Depends

In a multi-level, multi-org ATO environment it is important to ensure that the items are enabled in the proper organizations for ordering, manufacturing and planning your product. The table below summarizes the organizations in which items must be enabled.

Table 3–2 Item/Organization Enablement

Item	Item Validation Org	Receiving Org	Sourcing (Manufacturing) Org	Item Master Org	PO Validation Org
Item	All items in multi-level structure	Only the items that need to be received in the org. If this organization is also the shipping organization, all optional items in your model BOM should also be enabled in this organization.	Items manufactured and consumed in org	All items in multi-level structure	The ATO model, plus all items on its bill that you wish to be included in a purchase price roll-up

Model and Option Class Bills of Material

Model Bills of Material

An ATO model bill lists the option classes, options, and standard items that exist for a model. The bill of material for a PTO model lists the option classes, options, and included items that exist for that model.

An ATO model can have another ATO model as its component. The decision as to whether or not to create a config item for a lower level model is determined by the BOM supply type on the lower level model in the item validation organization.

If the supply type is set to phantom, no configuration item will be created during autocreate config, and the model and all its components will become part of the top level configuration BOM.

If the supply type is set to anything other than phantom, auto create config will create a configuration item for that model and only the config item will appear on the parent configuration BOM.

A PTO model can have another PTO model or an ATO model as its components.

Option Class Bills of Material

Option class bills can contain standard components, options, other option classes, or models. Oracle Manufacturing enables you to structure any number of levels of option classes within option classes so you can create an indented hierarchy of choices. You can also specify a mandatory component under any option class in the indented structure that would automatically be included anytime you choose an option from that option class (or a lower level option class).

BOM Attributes

The following BOM attributes are important for model or option class bills of material:

- **Maximum and Minimum Quantity:** For each option, you can specify a quantity range that limits the quantity of the option you can order during Order Management.
- **Check ATP:** This attribute is used by Order Management to determine whether to perform ATP check on this item. The value is defaulted from Check ATP item attribute of the item. See Check ATP chapter for more detail.

- **Optional:** The Optional attribute is applicable only to component items on model and option class bills of material. If this attribute is not checked for an option, the option will not appear in the configurator, or in the OM options window, but will be chosen automatically when you choose an optional item from the same model or option class. If this attribute is not checked for an option class, you are required to select at least one of the options from its bill of material.
- **Mutually Exclusive:** The Mutually Exclusive attribute is only applicable to option class items. If this box is selected, you are only allowed to select only one option from the option class bill of material.
- **Planning Percent:** Planning percent is used in forecast explosion. The planning percent for mandatory components is default to 100%. You can enter a planning percent for all the optional items and it can exceed 100%.

Note: If a sub-model can be multiply instantiated in the configurator, the planning percent on its parent should represent the average expected number of instantiations, multiplied by 100%. See: *Oracle Configurator User's Guide* for more information on multiple instantiation.

- **WIP-supply type:** In the case of a lower level model, a supply type other than phantom implies that the lower level model is to be treated as a configurable subassembly for which a configuration item and supply order needs to be created.

Note: If you plan to multiply instantiate a lower level model, its WIP Supply Type on the BOM must be non-phantom. For more information on the use of this attribute for standard items, please see the *Oracle Bills of Material User's Guide*. For more information on setting up bills of material, please See: *Oracle Bills of Material User's Guide*.

In a multi-level, multi-org ATO environment it is important to ensure that the bills are created in the proper organizations for ordering, manufacturing and planning your product. The table below summarizes the organizations in which bills must be enabled.

Table 3–3 BOM/Organization Enablement

BOM	Item Validation Org	Receiving Org	Sourcing (Manufacturing) Org	Item Master Org	PO Validation Org
BOM	Complete Multi-level BOM (often common to the primary manufacturing organization for each level)	None if entire configuration is made in house. Complete structure if configuration is purchased	Model and option class bills sourced from organization	None	None

Model and Option Class Routing

Routings for your model and all the option classes should be set-up in the appropriate manufacturing organizations. Oracle Bills of Material supports both discrete and flow manufacturing.

Common Model Routing to Option Classes

The routing for your model can include all steps that any configuration might require. You can then establish option class routings by referencing the model routing as a common routing, so lower level options can still reference the model's routing operations. For example, you can reference the Laptop Computer's routing as a common routing for the CPU option class, referencing the Laptop Computer's routing steps in the option class bill.

Alternatively, you can set up a routing for the model which contains only the operations which pertain to building the entire model structure and any of its mandatory components or immediate options. Then set-up separate routings for each of your option classes that contain the routing steps pertaining to it's options and mandatory components. It is important that option class routings and phantom model routings are of the same routing type as the parent model routing. It is also important that you do not duplicate routing operation sequences in any of the routings.

Note: If you plan to use resource capacity planning or constrain plans by resources, you must create separate routings for each option class to avoid duplication of resource usage in planning.

Discrete Manufacturing

Option Dependent Routing Steps

Oracle Bills of Material enables you to define option dependent operations in model or option class routings. You can specify that a routing step is option dependent which causes the configuration to include that routing step only if an option referencing that step was chosen. You can assign multiple routing steps to a single optional component in the model bill. You specify one value in the op sequence column on the main BOM window. The operation you specify on the main window is used as the back flush location for the item. Then, you can assign additional operation sequences to the components by using a child window. The child window is available from any optional BOM component line by button.

Table 3–4 Laptop Computer ATO Model BOM

Level	Item	Item Type	Op Seq	Optional	Qty
. 2	. Laptop Computer	ATO Model		No	1
.. 3	.. Carrying Case	Product	10	No	1
.. 3	.. Keyboard	Product	20	No	1
.. 3	.. CPU	Option Class	30	No	1
... 4	... Pentium I	Purchased Item	30	Yes	1
... 4	... Pentium II	Purchased Item	25, 35	Yes	1

Table 3–5 Routing for Laptop Computer ATO Model (commoned to the CPU Option Class)

Op Seq	Option Dependent	Department	Operation Description
10	No	Casing	Cut and smooth case edges
20	No	Assembly 1	Attach keyboard and cable
25	Yes	Assembly 2	Clean processor
30	No	Assembly 2	Insert processor into board
35	Yes	Inspection	Inspect Pentium II

In the example above, a routing is created for the ATO model. A second routing is created for the ATO option class that uses the model routing as common. This is a

typical set-up which enables the components on the option class BOM to reference operations on the Model BOM.

In this example, Oracle Manufacturing automatically includes Operation Sequence 25 and 35 in any configuration containing a Pentium II since the Pentium II option in the bill references steps 25 and 35. These routing step can also add to the standard cost for configurations with the Pentium II, since Oracle Manufacturing performs a single level rollup for configurations and accounts for all costed resources used in the configuration routing.

Operation Sequence Inheritance

You can specify that items within the model structure inherit the operation sequence from their parent option class or model. You invoke this option by setting the site level profile BOM: Inherit Option Class Operation Sequence Number to Yes. Bills of Material applies inheritance logic for all items in the model structure with an operation sequence defaulted to 1. You should maintain a routing for the top-level model, but may not need to maintain a routing for any option class or model where all items below it have an operation sequence of 1.

In the example below, the profile option is set to Yes, and the CPU option class items have operation sequence numbers for the Laptop Computer routing. The processor options are defaulted to an operation sequence of 1, and inherit operation sequence 30 from the CPU option class item. Routing is not required for the CPU option class.

Table 3–6 Operational Sequence Inheritance

Level	Item	Item Type	Op Seq	Operation Sequence Inherited
. 2	. Laptop Computer	ATO Model	-	-
.. 3	.. CPU	Option Class	30	Retains 30
... 4	... Pentium I	Option	1	Inherits 30
... 4	... Pentium II	Option	1	Inherits 30

WIP Serial Tracking for Configurations

WIP allows you to start serial tracking and genealogy at any operation on the job for assemblies that have predefined serial generation. If you want this functionality for your configurations, set the model to be under predefined serial control, and specify the default serialization starting operation sequence number on any mandatory operation in the ATO Model Routing. This information will then be copied to the configuration item routing. If you are using non-commoned option

class routings, and you want the default serialization starting operation sequence number on the configuration to be one of the routing operations on the option class routing rather than one on the model routing, then the option class must also be set to pre-defined serial control. If you define a default serialization starting operation sequence number on both the model and option class routing, the setting on the option class will be ignored.

For more information on WIP serial tracking, see the *Oracle Work in Process User's Guide*.

Flow Manufacturing

Option Dependent Event

A flow routing consists of processes, line operations and events. You can designate option dependent events by checking the Optional check box for an event. On your bills of material, the operation sequence refers to the event sequence on a flow routing. Therefore, you associate an option with event sequences. As in discrete, a single option can reference multiple event sequences.

All operations and processes on the model routing will be included on the configured routing. All non optional events will be included on the configured routing. The option dependent events will only be included in the configuration routing if an option referencing that event was chosen.

Operation Sequence Inheritance

You can specify that items within the model structure inherit the event sequence from their parent option class or model. This functionality is similar to that described under Discrete Manufacturing.

Cataloging Configurations

Oracle Manufacturing provides features that help you catalog your assemble to order configurations so you can easily find on hand configurations that meet customer requirements, or find configuration item numbers that were used to fulfill previous orders for the same configuration. Oracle Manufacturing lets you set up rules to automatically assign Item Catalog descriptive element values to assemble to order configurations based on the options selected.

For example, you might want to catalog computer configurations using descriptive elements that indicate the Processor Type and Operating System (OS) chosen for each configuration. You could then assign the Laptop Computer model item to a catalog group that specifies those descriptive elements, but not assign any values to those attributes since the Laptop Computer is a model, not a specific configuration. You would also assign each option item to a catalog group with descriptive elements that describe that option. So you would assign the processor option items (Pentium I, Pentium II) to a Processors catalog group containing a Processor Type descriptive element as well as others that might describe more specific processor attributes.

Table 3–7 Catalog Configurations Example

Item	Catalog Group	Descriptive Element Name	Descriptive Element Value
Laptop Computer	Personal Computers	Processor Type OS	-
Pentium I	Processors	Processor Type	Slow
Pentium II	Processors	Processor Type	Fast
Windows	Operating Systems	OS	Windows
UNIX	Operating Systems	OS	Unix

You would also specify which descriptive elements to assign automatically to an ordered configuration, based on options chosen under each option class in the Laptop Computer’s bill. For example, when you defined the bill for the CPU option class, you would specify that the Processor Type descriptive element should be assigned automatically based on options chosen under this class. The Bills of Material window lets you specify descriptive elements for each model or option class bill of material to be used to populate configuration item description. If you want the Autocreate Configuration Items program to concatenate descriptions, you

must specify descriptive elements for each model and option class bill. An example of a concatenated description might be Pentium II-Windows.

Table 3–8 Concatenated Description Example

Item	Item Type	Element Name
CPU	Option Class	Processor Type
Operating System	Option Class	OS

More on cataloging configurations can be found in the CTO chapter of the *Oracle Bills of Material User's Guide*.

Note: For multilevel configurations, the description of the parent configuration does not roll-up the description from child configurations. Details of this package are described in [Description of Custom CTO Packages](#) on page 2-14.

Configuration Rules

Configuration rules will be defined in Oracle Configurator Developer.

For more information on setting up configuration rules, please See: *Oracle Configurator User's Guide*.

Purchase Pricing for Models and Supplier Communication

Topics covered in this chapter include:

- [Purchase Pricing for Models and Supplier Communication](#) on page 4-2
- [Purchase Price Calculation](#) on page 4-2
- [Note to Buyer/Note to Receiver](#) on page 4-5
- [Isupplier Portal](#) on page 4-6
- [Supplier Item Descriptions](#) on page 4-8

Purchase Pricing for Models and Supplier Communication

This section describes how to set-up purchasing data to enable purchase price calculation and channels for communicating configuration details to your supplier.

Purchase Price Calculation

CTO will perform a purchase price calculation during autcreate config for any configuration generated from a “buy” model or a model with “buy from” sourcing rules. The price calculation is done in the following ways: Using List Prices, Using Blanket Purchase Orders for Models, or Using Custom Hooks.

This section will describe the set-up requirements for each of these calculations. Details on the calculation themselves can be found in Chapter 9: Create Configuration Items.

List Price Calculation Setup Requirements

The list price for the model and all its options should be defined on the item master in the PO validation organization for the operating unit where the purchased configuration will be received.

Blanket Price Calculation Setup Requirements

You must first define and approve a blanket purchase order(s) for your purchased ATO Model, it's Option Classes and Options. For ease of maintenance and performance reasons, it is recommended to have a separate blanket for each model.

For details on setting up blanket purchase agreements, please see the *Oracle Purchasing User's Guide*, Overview of Purchase Orders. Below is a discussion of items critical to the CTO purchase price roll-up process.

- Price breaks assigned to the model will be copied to the configuration item. Any price breaks assigned to option classes or options will be ignored. For ATO Models, the price breaks must not be organization specific. In other words, the "Org" and "Ship to" fields must be blank.
- If you have assigned your model sourcing rules at the item level, the sourcing rules must have both a supplier, and supplier site and must have both a start and end date. Your blankets do not need effective and disable dates. But if they have them, they must be inside the effective dates on the sourcing rule.
- If you have assigned sourcing rules to your model at any other level (e.g. item-org), the blanket PO(s) must have both effective and disable dates on the

terms tab. Additionally, if you have multiple blankets defined for a single model, the effective dates on all blankets must be the same.

Next, define global approved supplier, supplier sites for the ATO Model that point to the appropriate blanket. If you are using a global agreement, you must have an ASL defined in the global agreement owning operating unit. Please see the Define Approved Suppliers Lists section in the *Oracle Purchasing User's Guide* for more information.

Finally, set the new profile option BOM: CTO Default Blanket PO Release Method to determine the release method on the ASL(s) created for the configuration.

Limitations of Blanket Purchase Orders for Models

- If the profile PO: Automatic Document Sourcing is set to Yes:
 - CTO still requires ASLs to be defined for the model to determine the valid vendor, vendor sites and PDOI will create ASLs for the configuration.
 - However, the latest blanket will be used for the calculation instead of the one defined in the model ASL.
- The MRP: Default Assignment Set must be the same for all responsibilities, or you may run into inconsistencies in OM, PO and APS.
- CTO will not over-write an existing price in an existing blanket. CTO will also not overwrite the list price when progressing the order manually via the actions button. The Purchase Price Calculation batch program has a *parameter to specify whether or not to overwrite the list price*. So, if you negotiate a special price for a pre-configured item and enter it on the blanket for the model or the list price on the item master, CTO will not over-write this price. However, this also means that CTO will not recalculate and overwrite an existing entry in a blanket when you match to an existing configuration, or when you run the batch program manually, even if prices for the options on the current valid blanket have changed. CTO will calculate a price for any valid blanket that does NOT have an entry for the matched configuration. Therefore, it is suggested that you set up a new blanket each time you renegotiate prices with your supplier, rather than just updating the prices on the existing blanket. This way, as soon as the new blanket becomes effective, CTO will automatically recalculate a new price based on the new blanket prices for any matched configuration or any time the batch process is run.
- Retroactive pricing is not supported for configurations. If you change the price of a model or option price, the price on existing configurations in the blanket is

not recalculated. You will have to manually update the configuration prices directly to affect existing POs or Reqs.

- If users “expire” a blanket line for a configuration, they must also remove the ASL document reference if they want to recalculate a new price for the configuration
- If users “cancel” a blanket line for a configuration, a new price will NOT be calculated for the configuration
- CTO uses the sys date to look for valid blankets and sourcing rules. Prices for a configuration will be based on the blanket that was valid on the day the configuration is created. Therefore, it is recommended that you run the Purchase Price batch program for all open sales orders on the day you cut over to a new blanket to recalculate valid prices on the current valid blanket.
- If you have not defined sourcing rules for your model, and you have multiple blankets defined for different suppliers that are all effective for the same period, a sourcing rule will be created for the configuration with 100% allocation to one of the Suppliers, and 0% allocation to the others.
- If you are using global agreements, blanket price roll-up creates a new entry in the global agreement, and enables it in all the operating units in which the model line was enabled. An ASL will also be created in all the enabled operating units, even if one didn't exist for the model.

Custom Price Calculation Setup Requirements

If users prefer to do their own price calculation, CTO now provides two custom hooks in autocreate config. The first (CTOCULPB.pls) will insert the result into the list price of the configuration item in the PO validation org instead of our calculated price. The second (CTOCUPPB.pls) will allow users to do their own calculation based on any vendor, vendor site combination defined in a global ASL (no associated blanket is required). The user is expected to update the appropriate tables as part of the custom program. For more information on these procedures, please see the "Description of CTO Custom Packages" section of Chapter 2.

Note to Buyer/Note to Receiver

Autocreate Req will populate the note to buyer and note to receiver columns of the requisition import table with text from the message dictionary. The message "note_to_buyer" is seeded with text that reads: "Supply for sales order : <order_num>."

You can change the text of the note by editing the message dictionary for 'CTO Note to Buyer'. There are also message dictionary entries for 'CTO Note to Receiver' which can be populated with custom text.

Isupplier Portal

You must activate the CTO link in the iSupplier Portal in order for your suppliers to be able to see the configuration details for your purchased configurations. Below is a summary of steps required to personalize the iSupplier Portal to see the configuration details. For additional information, please see the *OA Framework User's Guide*.

To activate the CTO link in the iSupplier Portal:

1. Log on as the system administrator.
2. Make sure Personalize Self-Service Defn. profile is set to 'Yes' in your user/responsibility level.
3. Make sure Disable Self-Service Personal profile is not set to 'Yes' in your default/user/responsibility level.
4. Open the iSupplier Portal full access.
5. Open an active PO, it will now have links "Personalize Region" on top of every region.
6. Click the link to personalize that region. This will take you to a new page.
7. Choose Personalization Level Site/Organization/Responsibility level.
8. Click Next. This will take you to the next screen.
9. Enter the responsibility/Site name.
10. Click Next.
11. This will bring up the last page to create/update the personalization.
12. Add the column for configuration details.

This will enable a column called "configuration" on the iSupplier Portal PO details page. Any item on the PO that has a base model, will have a link activated in this column that will take the supplier to a page that displays all the option classes and options that were chosen in order management. If the configuration item has been de-linked from the sales order, the BOM will be displayed based on the actual configuration BOM in an organization, based on the following logic:

- Display BOM from the first receiving organization on the PO in which it exists.
- If BOM does not exist in any of the receiving organizations on the PO, display BOM from the first organization within this Set of Books in which it exists.

- If BOM does not exist in any of these organizations, display a “BOM not found” message.

For more information on the iSupplier Portal see: *Oracle iSupplier Portal Implementation Manual*.

Supplier Item Descriptions

CTO displays the supplier item descriptions for the model, option class and options on the iSupplier Portal configuration details page and in the item level text attachment that is generated during auto create config for buy configurations.

Supplier item descriptions are shown only if defined on the blanket if the document is a blanket release, or the global ASL for the item for the supplier, supplier site if the document is a standard purchase order.

Forecast Models and Options

Topics covered in this chapter include:

- [Forecast Models and Options](#) on page 5-2

Forecast Models and Options

Oracle Master Scheduling/MRP lets you define and maintain forecasts for any item, at any level on your bills of material. You can forecast demand for products directly, or forecast product families and explode forecasts to individual products through planning bills. You can directly forecast demand for option classes, options, and mandatory components. You can also explode forecasts for models and option classes, through model and option class bills, to selected option classes, options, and mandatory components.

Note: In a multi-level, multi-organization environment, Advanced Planning must be used for forecasting. Please see the CTO Enhancements section in the Oracle Advanced Supply Chain Planning, Oracle Risk Optimization, and Oracle Global Order Promising user's guide for more information.

Forecast Control

Forecast Control

Use the Forecast Control item attribute to tell Master Scheduling/MRP the types of demand that you place for models, option classes, options, and mandatory components. Master Scheduling/MRP uses the Forecast Control value you assign to each assemble-to-order and pick-to-order item when forecasting and master scheduling models and options.

Independent Forecast Demand

Independent forecast demand is demand that you place for an item by directly entering forecasts for the item, rather than exploding forecast to the item.

If you forecast demand directly for an item, then set Forecast Control to Consume.

Exploded Dependent Forecast Demand

The forecast explosion process generates the exploded forecast demand for an item by collecting the forecasted demand for all the components in the item's bill of material. You typically generate exploded forecast demand for items, such as option classes and options, whose demand is directly related to or derived from the bill of material structure for other items.

If you forecast demand for an item by exploding demand from a higher level item in a bill of material, then set Forecast Control to Consume and Derive.

Note: if you are purchasing the model, the forecast control on all option classes and options should be none.

If you forecast demand for an item directly, and you explode forecast demand to the item, also set Forecast Control to Consume and Derive.

Sales Order Demand

Sales order demand is demand that you place when your customers order configurations. As your customers order configurations, Order Management can automatically place sales order demand for each model, option class, and option selected by your customer when they place the order.

If you place sales order demand for an item, but do not forecast the item, then set Forecast Control to None.

Derived Sales Order Demand

Under normal circumstances, Order Management does not place sales order demand for mandatory components when your customers order configurations.

You can set the Forecast Control attribute to Consume or Consume and Derive to automatically place demand and consume forecasts for mandatory components when you place sales orders demand for configurations that include the mandatory components.

If you forecast demand for a mandatory component, either directly or through forecast explosion, then set Forecast Control to Consume or Consume and Derive.

Forecast Explosion

Forecast explosion is the process that explodes forecasts for planning items, models, product families, and option classes to selected components on your planning, model, product family, and option class bills. Forecast explosion calculates exploded forecast quantities by extending parent forecast quantities using the component usages and planning percents defined on your planning, model, and option class bills.

A product family can be exploded to dependent quantity explosion for those members that have a forecast control of Consume and Derive. This explosion is

based on the product family allocation percentage in relation to the existing sales order quantity. You can associate alternate bills of material to multiple forecasts for the same item. This lets you explode the same forecast using different components, usages, and planning percents.

You explode forecasts, using the Load Forecasts or Load Master Schedules forms, by choosing the Explode Forecasts option when loading a forecast into another forecast or a master schedule.

The following table shows how forecast explosion explodes a forecast for 100 Laptop computers. Notice that forecast is only exploded to items where you have set Forecast Control to Consume and derive.

Table 5–1 Exploded Forecast

Level	Item	BOM Item Type	Forecast Control	Optional	Plan%	Forecast/Sales Order
. 2	. Laptop Computer	Model	Consume	No		100
.. 3	.. Carrying Case	Standard	Consume and derive	No	100%	100
.. 3	.. Keyboard	Standard	Consume and derive	No	100%	100
.. 3	.. CPU	Option Class	Consume and derive	No	100%	100
... 4	... Pentium I	Standard	Consume and derive	Yes	65%	65
... 4	... Pentium II	Standard	Consume and derive	Yes	35%	35
.. 3	.. Monitor	Option Class	Consume and derive	No	100%	100
... 4	... VGA	Option Class	Consume and derive	Yes	70%	70

Table 5–1 Exploded Forecast

Level	Item	BOM Item Type	Forecast Control	Optional	Plan%	Forecast/Sales Order
....5	.... VGA Manual	Standard	Consume and derive	No	100%	70
....5	.... VGA1	Standard	Consume and derive	Yes	50%	35
....5	.... VGA2	Standard	Consume and derive	Yes	50%	35

Forecast Consumption

Forecast consumption is the process that replaces forecast demand with sales order demand. Each time you place a sales order, you create actual demand. If the actual demand is forecasted, then you typically want to reduce the forecast demand by the sales order quantity to avoid overstating demand.

Master Scheduling/MRP automatically consumes forecasts for configurations, models, product families, option classes, and options when you place sales order demand for configurations.

Forecast consumption for product families behaves the same as forecast consumption for models. A sales order for a family member will consume forecasts for the member item and forecasts for the entire family.

Attention: Under normal circumstances, no sales order demand is placed for mandatory components. You can generate derived sales order demand for selected mandatory components, since forecast consumption generates derived sales order demand for all items where you have set Forecast Control to Consume or Consume and Derive. This enables you to define and maintain forecasts for key mandatory components as well as models, option classes, and options.

The following table shows how forecast consumption consumes the exploded forecast for 100 Laptop Computers when a customer places a sales order for 10 Laptop Computers with Pentium IIs and VGA1 monitor. Notice that forecast consumption generates and consumes derived sales order demand for each

mandatory component where you have set Forecast Control to Consume or Consume and Derive.

Table 5–2 Forecast Consumption Example

Level	Item	BOM Item Type	Forecast Control	Optional	Plan%	Forecast/Sales Order
. 2	. Laptop Computer	Model	Consume	No	-	90 10
.. 3	.. Carrying Case	Standard	Consume and derive	No	100%	90 10
.. 3	.. Keyboard	Standard	Consume and derive	No	100%	90 10
.. 3	.. CPU	Option Class	Consume and derive	No	100%	90 10
... 4	... Pentium I	Standard	Consume and derive	Yes	65%	65
... 4	... Pentium II	Standard	Consume and derive	Yes	35%	25 10
.. 3	.. Monitor	Option Class	Consume and derive	No	100%	90 10
... 4	... VGA	Option Class	Consume and derive	Yes	70%	60 10
.... 5	.... VGA Manual	Standard	Consume and derive	No	100%	60 10
.... 5	.... VGA1	Standard	Consume and derive	Yes	50%	25 10
.... 5	.... VGA2	Standard	Consume and derive	Yes	50%	35

Master Schedule Models and Options

Topics covered in this chapter include:

- [Master Schedule Models and Options](#) on page 6-2
- [Production Relief](#) on page 6-3
- [Shipment Relief](#) on page 6-4

Master Schedule Models and Options

Oracle Master Scheduling/MRP also lets you master schedule any planned item, anywhere on your bills of material, including models, option classes, options, product families, and mandatory components. You can create master production schedules to load forecasts and sales orders into a master demand schedule. You can then use the master demand schedule to drive the planning process. Identify your master production schedules as visible to the Oracle Inventory available-to-promise (ATP) process, so that Order Management can check ATP information for your key subassemblies when scheduling sales orders for configurations. The Shipment and Production Reliefs for product families prevents the duplication of supply/demand and keeps the supply/demand for the product family in sync with those of the member items.

Note: In a multi-level, multi-organization environment, Advanced Planning tools must be used for master scheduling. Please see the CTO Enhancements section in the Oracle Advanced Supply Chain Planning and Scheduling, Oracle Risk Optimization, and Oracle Global Order Promising user's guide for more information.

Production Relief

Production relief, also known as MPS relief, is the process that replaces planned supply with actual supply when you create a work order to build a manufactured item, or when you create a purchase requisition to buy a purchased item. Each time you create a work order or purchase requisition, you create actual supply. If the actual supply is planned, then you typically want to reduce the planned supply by the work order or purchase requisition quantity to avoid overstating supply. When a purchase order, purchase requisition or discrete job is created for a member of a product family, the MPS is relieved for the member items as well as the product family.

Production relief relieves your master production schedules for any phantom item when you create a work order for the phantom's parent. Since option classes, and optionally models, are created as phantoms on the configuration item bill, Master Scheduling/MRP automatically relieves your master production schedules for models and option classes when you create a final assembly order for a configuration. Production relief relieves your master production schedules for options and mandatory components when you create work orders for them.

Shipment Relief

Shipment relief, also known as MDS relief, is the process that reduces anticipated demand when you ship product that satisfies a sales order. Each time you ship a product to a customer, you satisfy demand. If the demand is included on your master demand schedules, then you typically want to reduce the anticipated demand by the sales order quantity to avoid overstating demand.

Master Scheduling/MRP automatically relieves master demand schedules when you ship a sales order for a configuration. If you have not reloaded your master demand schedule after the AutoCreate Configuration process, there will be no master demand schedule for the configuration item. When there is no master demand schedule for the configuration item, shipment relief explodes the configuration bill and relieves master demand schedules for each model and option class on the bill. Shipment relief also relieves master demand schedules for each standard item where you have set Forecast Control to Consume or Consume & Derive. If you ship a sales order for a member of a product family, sales order shipment relieves the master demand schedule for member items and the product family. If you have reloaded your master demand schedule since the AutoCreate Configuration process, shipment relief finds and relieves master demand schedules for the configuration item only.

For more information about master scheduling, please See: *Oracle MRP/Master Scheduling User's Guide*.

Enter Configured Orders

Topics covered in this chapter include:

- [Enter Configured Orders](#) on page 7-2

Enter Configured Orders

This chapter describes entering and configuring sales orders and provides a detailed description of the workflow for processing configured orders. It also describes the Match and Reserve functionality.

Release 11i Order Management Overview

One of the major features in R11i Order Management is the integration of Oracle Configurator. Oracle Configurator provides graphical configuration interface, dynamic validation and other features that make the order configuration a totally different experience.

Another major feature in Order Management is the use of Oracle Workflow to provide you control over the sequence of events that occur in processing of orders, returns, order lines, and return lines. Oracle Workflow maintains the state of all activities for an order, automatically executes functions and sends notification, and maintains a history of completed activities. Oracle Workflow lets you automate and continuously improve business processes, routing information of any type according to business rules you can easily change to people both inside and outside your enterprise. Workflow replace Order Cycles to process orders.

Enter Configured Orders

Orders entered via iStore or Order Management can be configured using Oracle Configurator. Users enter a model on the order, then click Configurator to open the Configurator window to select options.

Oracle Configurator Developer User's Guide provides detailed information on how to define configuration rules to be used during option selection.

As explained in the set-up chapter, orders entered in Order Management can be configured using either Oracle Configurator or the Order Management Options Window. See Chapter 2, Profiles, for more information on the profile option that controls this behavior.

Note: The options displayed in the OM options window or in the configurator are based on the model structure in the OM validation organization. It is important that the entire model and option structure in the validation organization matches the structure in your manufacturing organizations. This can be achieved by either commoning all levels of your model and option class bills to the OM validation organization, or by ensuring changes to the model, option class, or options are made in all organization BOMs simultaneously. Standard, mandatory components can vary between organizations.

Note: The model, option class and all optional items, and PTO included items need to be on the appropriate price list before you can enter an order.

TIP: If you need have a lot of option classes or options with a zero price, you can easily put all items on a price list with a zero price (or any price, for that matter). On the price list, enter the following values:

- Product Context: Item
- Product Attribute: ALL_ITEMS
- Product Value: ALL
- UOM: whatever
- Application Method: Unit Price
- Value: 0 (or whatever default price you want to set)

You then can enter lines for only the items that have a non-zero price.

View Selected Options

Whether you use Oracle Configurator or the Order Management Options Window to select options or import a configured order, you can view and delete selected options along with their option classes from the Sales Order Pad line region.

Note: If the order was originally configured using Oracle Configurator, whether in iStore or in Order Management, the configurator window must be used to make modifications to the selections. Similar constraints exist for the options window.

The View Line Detail option from the Tools menu in Sales Order Pad lets you toggle between displaying the model line only or model line plus all the configuration detail.

Dropshipping Configurations

ATO items, Configurations and components of non ship model complete (SMC) PTOs can be dropshipped.

If you always dropship an item, you can designate it as a dropship item by setting up its supply source type to 'External' in on the OM tab in the item master. All orders for this item by default will be dropship orders. You can also explicitly choose the 'External' supply type on the order line in the sales order pad. Each line of a Non ship model complete PTOs may be dropshipped from a different supplier based on your sourcing rules.

As with standard items, planning can not be used for External ATO orders. You can not perform an ATP inquiry or reserve on-hand to a dropship ATO order. The schedule date is defaulted from the request date. Shipsets or Arrival sets can not be drop-shipped. See: the *Oracle Order Management Implementation Manual* and user's guide for more information on drop shipping.

Match Configuration Item

Match enables you to check for an existing configuration that matches the current ordered configuration exactly. If a match is found, the system will link the matched item to the sales order line.

In a multi-level configured environment, if a match is not found for the complete multi-level configuration, an attempt is made to find a match for any lower level configurations. If a match is found only for a lower level configurations, a new configuration item is created for the top level model and linked to the sales order. The matched items for lower level configurations are used as components in the top level BOM.

Match is performed independent of organization. If a matching configuration is found in any organization, it is enabled and used in the organizations required for this order.

Match does not consider mandatory components or item revisions when looking for matching configurations. However, the search for existing configuration does take into account the routing type (discrete or flow) associated with model being ordered.

The match is done by comparing the current configuration with the table bom_ato_configuration. This table is loaded only if the match profile is on at the time of configuration item creation. You will not be able to match to any configurations created before the match profile was turned on.

Prerequisites

Match requires that the order is booked and scheduled and that a configuration item has not been created for the order line. As explained in the Setup chapter, you need to set the profiles accordingly before you use the Match function.

BOM: Match to Existing Configuration

BOM: Use Custom Match Function

Perform Match

You can perform Match for an ATO model order line after the line is scheduled. Match is available from the following form or program:

- **Sales Order Pad Actions Button - Match:** This action performs a match. If a match is found for the top level assembly, the system links the matched item to the order line. If there is onhand inventory for this linked item, you have a choice to make a reservation or not.
- **AutoCreate Configuration Concurrent Program:** This program performs a match. If a match is found, the system links the matched item to the order line. For multi-level configurations, auto create config will try to match and re-use lower level configurations if a match for top level assembly is not found. If BOM: Automatic Reservations is set to Yes, and the order schedule date is within the OM: Reservation Time Fence, the program will automatically reserve any available on hand.
- **Sales Order Pad Actions Button - Progress Order:** When you perform Progress Order - Create Configuration Item, the system performs a match. If a match is found, the system links the matched item to the order line. For multi-level

configurations, the system will try to match and re-use lower level configurations if a match for top level assembly is not found. Reservations is set to Yes, and the order schedule date is with in the OM: Reservation Time Fence, the program will automatically reserve any available on hand.

Workflow for Configured Orders

Seeded Workflow

Using Oracle Workflow in Oracle Order Management User's Guide provides a description of all the seeded workflows. This section provides further information on the seeded workflow for ATO models and ATO items.

- **Line Flow - Generic** is a generic line workflow that works for all item types including ATO/PTO models and ATO items.
- **Line Flow - ATO Model** is a line workflow that works only with ATO models and can be optionally assigned to model order lines instead of Line Flow - Generic. It is a subset of Line Flow - Generic workflow.
- **Line Flow - ATO Configuration item** is a line workflow that works only with ATO configuration items. This must be set up during the implementation as described in Chapter 2.
- **Line Flow - ATO Item** is a line workflow that works only with ATO Items and can be optionally assigned to ATO item lines instead of Line Flow - Generic. It is a subset of Line Flow - Generic workflow.

This special type workflow offers you the flexibility to assign unique processing activities for ATO models or items to the workflow. You may decide not to use the generic workflow for ATO models or items and use the special type workflow instead.

Workflow Activities for ATO Model

The following are the main workflow activities for an ATO Model order line:

- Enter
- Schedule
- Create Configuration Item (includes creation of, BOM, Routing)
- Invoice

Workflow Activities for ATO Configuration Items

The following are the main workflow activities for an ATO configuration item order line:

- Enter
- Schedule
- Calculate Lead Time
- Cost Rollup
- Calculate Purchase Price
- Create Supply (Work Order, Flow Schedule, Purchase Requisition, or DropShip Requisition)
- Shipping
- Fulfillment
- Invoice

Please see Chapter 2 for details on the setup required for a Configuration Line Workflow assignment.

Workflow Activities for ATO Item

Following are the main workflow activities for an ATO item order line:

- Enter
- Schedule
- Create Supply (Work Order, Flow Schedule, Purchase Requisition, or DropShip Requisition)
- Ship
- Invoice

ATO Model Line vs. Configuration Item Line

Once a configuration item is created for an ATO model order line, Order Management creates a new order line for the configuration item. The configuration item line goes through manufacturing and shipping processes while the ATO model line waits for the completion of those processes.

Note: For multi-level configurations, order management creates a configuration line for the top level configuration item. Lower level configuration item details are not maintained by order management.

The following describes the differences between the two lines.

Table 7–1 ATO Model vs. ATO Configuration Order Line Workflows

Line Type	(Main) Activities for the Line
ATO Model Line	Enter, book, schedule, create configuration item (including BOM, and routing, invoice
Configuration Item Line	Configuration item cost roll-up and lead time calculations, create supply, shipping

Order Line Statuses

The status on an order line provides good information on the current state of a line. The following table lists the line status for both the ATO model and the configuration line.

Table 7–2 Line Status for Both the ATO Model and the Configuration Line

Order Line Type	Line Status	Status Description	Comments/Tips
ATO Model	Entered	The line is entered and not booked.	-
-	Booked	The line is booked.	The status remains Booked until the configuration item is shipped.
-	Fulfilled	After the configuration line is shipped, the model line shows this status. It is eligible for invoicing.	-
-	Closed	The line is closed.	-
Configuration	BOM and Routing created	The configuration line starts with this status.	-

Table 7–2 Line Status for Both the ATO Model and the Configuration Line

Order Line Type	Line Status	Status Description	Comments/Tips
-	Production Open	When a work order is linked or a flow schedule is referenced to the order line, the configuration line shows this status.	The cursor must be on the configuration order line in order to run Progress Order -> Create Supply
-	Production Partial	This status is shown when there is partial production completion.	If users manually reserve on-hand to an order line associated with a make item, the status will also be Production Partial
-	Production Complete	This status is shown when the entire production is complete.	-
-	PO-ReqRequested	A row has been inserted in the req interface tables for this internal order line.	The line will remain at this status until the user runs Requisition import. This status is used only if you create purchase requisitions using autocreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for "external" (dropshipped) order lines.
-	PO-ReqCreated	A requisition has been created and reserved to the sales order line.	This status is used only if you create purchase requisitions using autocreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for "external" (dropshipped) order lines.

Table 7–2 Line Status for Both the ATO Model and the Configuration Line

Order Line Type	Line Status	Status Description	Comments/Tips
-	PO Created	A purchase order has been created and reserved to the sales order line.	This status is used only if you create purchase requisitions using autocreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for "external" (dropshipped) order lines.
-	PO-Partial	Part of the purchase order has been received into inventory.	If users manually reserve on-hand to an order line associated with a buy item, the status will also be PO-Partial. This status is used only if you create purchase requisitions using autocreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for "external" (dropshipped) order lines.
-	PO-Complete	The entire purchase order has been received into inventory.	This status is used only if you create purchase requisitions using autocreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for "external" (dropshipped) order lines.
-	Awaiting Receipt	Indicates that the 'purchase release' activity is completed on a dropshipped order line.	The line remains in this status until fulfilled. This status is used for "external" (dropshipped) order lines.
-	Fulfilled	The line is shipped.	-
-	Closed	Closed Line	Line will close once invoiced

De-link Configuration Item

When a match is made or a configuration is created for an order, the top level configured item is linked to the sales order.

You can de-link the configuration item from an ATO model line through the Sales Order Pad Action Button Delink Config Item. If there is a reservation against sales order for the configuration item in the shipping organization, Delink Configuration Item will automatically unreserve the supply from the sales order. Similarly, if a flow schedule is referenced to the sales order line which is delinked, the reference will be removed.

Delinking the configuration sets the Order Management workflow on the model back to "Create Configuration Eligible."

Note: With the addition of the change order process (described in chapter 12 of this document), it is suggested that you do not manually de-link a configuration item.

Link Configuration Item

You can manually link a configuration item to an ATO model line through the Sales Order Pad Action Button - Link Config Item. This is useful when you want to ship a near match item or need to re-link a configuration item back to the original model line after you de-link the configuration item.

WARNING: The system does not perform a match validation when you manually link a configuration item. If the linked configuration varies significantly from the configuration chosen in Order Management you can have significant issues in planning issues and the install base, particularly in a multi-level, multi-org environment.

In a Multi-level, Multi-org structure, autcreate config and match processes ensure that configuration items are created for lower level models and also ensure that the demand is created in the correct organizations using the sourcing rules. 'Link Process' simply links the item. It does not validate existence of BOM/RTG, does not honor sourcing rules and does not update the demand picture.

It is suggested that you do not manually link a configuration item except under the following conditions:

1. You have a near match in stock in a single level, single org environment and want to ship it to the customer without changing the details on the order.
2. You are certain that the item you are linking is a match and have ensured that it has correct set-up of bills, routings, sourcing rules in the correct organizations.
3. You temporarily de-linked an item for some reason (Rarely needed after Family Pack E/11i.5) and need to link the same item back to the sales order

In all other cases, it is preferable to re-progress the model through create configuration process to have the system find a match or generate a new configuration item id.

Topics covered in this chapter include:

- [Check ATP](#) on page 8-2
- [Multi-level, multi-org using the Global ATP Server](#) on page 8-6

Check ATP

Using Order Management or the Configurator, you can promise ship dates for configurations based on Available-to-Promise(ATP)/Capable-to-Promise(CTP) information for key components. ATP functionality for configurations is discussed here.

Setup

The following are the key attributes you need to be aware of for performing ATP/CTP check on an item.

Check ATP Item Attribute

This item attribute indicates what kind of ATP check you want to perform at the level of this item or higher. Settings include:

None - No need to check ATP at this level.

Materials Only - Check material availability for this item at this level.

Resource Only - Check availability of the resources required to assemble this item.

Material and Resource - Check both material and transportation resource availability for this item.

The typical setting for a model or option class is None.

ATP Components Item Attribute

The ATP Component Flag indicates what kind of ATP check you want to perform at the component level. ATP Component flag tells the system to check to see if its components are set for ATP.

None - No need to check ATP for this item at the component level.

Materials Only - Check availability of the components in the bill for this item.

Resource Only - Check availability of the resources required to assemble this item.

Material and Resource - Check availability of both materials and resources required to assemble this item.

The typical setting for a model or option class is anything other than None.

ATP Flag at BOM Level

The ATP Flag on the Bill of Material form lets you control the depth of the BOM considered in the ATP calculation. The ATP Flag for a component defaults from the component item attribute Check ATP. If the item attribute is Yes, you can change value. If the item attribute is No, you can not change it to Yes in the bill.

Resource Capacity

Check the CTP Flag of each resource where the capacity needs to be checked. The CTP flag is on the routing resource level.

Additional Considerations in a multi-level or multi-org environment:

ATP in a multi-org or multi-level environment requires APS.

The INV: Capable to promise profile must be set to 'ATP/CTP based on planning output'

The MRP: Default sourcing assignment set profile must point to an assignment set if sourcing of models is required.

Each model and all its components must be in a ATP enabled plan in the sourcing organization and the plan should use the assignment set specified in the profile MRP: Default sourcing assignment set.

Partial sourcing of models is not supported. In other words, in each organization, a model can only be either 100% make at or 100% transfer from another org.

Please see the CTO Enhancements section in the *Oracle Advanced Supply Chain Planning*, *Oracle Risk Optimization*, and *Oracle Global Order Promising User's Guide* for more information on ATP in a multi-organization environment.

Group ATP for Configurations

In our single level/single org environment example from chapter 1, you would set item attributes according to the following table if you wanted to promise ship dates for Laptop Computers based on the available supply of processors and monitor manuals, but the supply for other components was not constrained.

Table 8–1 Group ATP for Configurations Example

Select Code	Level	Item	Type	Optional	ATP Components	Check ATP
Yes	. 2	. Laptop Computer	ATO Model	No	Yes	-
-	.. 3	.. CPU	Option Class	No	Yes	-
-	... 4	... Pentium I	Purchased Item	Yes	-	Yes
Yes	... 4	... Pentium II	Purchased Item	Yes	-	Yes
-	.. 3	.. Monitor	Model (Phantom)	No	Yes	-
-	... 4	... VGA	Option Class	Yes	Yes	-
	.... 5	.... VGA Manual	Purchased Item	No	-	Yes
Yes	.... 5	.... VGA1	Purchased Item	Yes	-	-
-	.... 5	.... VGA2	Purchased Item	Yes	-	-
-	... 4	... EGA	Option Class	Yes	-	-
-	.... 5	.... EGA1	Product	Yes	-	-
-	.... 5	.... EGA2	Product	Yes	-	-
-	... 4	... Monitor Manual	Purchased Item	No	-	Yes

If you ordered a Laptop Computer with a Pentium II and a VGA1 monitor, and requested a shipment on 2/5, Order Management would offset that ship date to compute a requested availability date for components, then perform a group ATP check for all Check ATP components simultaneously.

The table below illustrates sample results of a group ATP check. It includes all components from the previous table that would be included in the selected configuration and whose Check ATP attribute is **Yes**. In this case, the requested date for components is offset to 2/1, four days before the requested ship date because of manufacturing lead time*. The group ATP check found that the VGA Manual is the latest available component, so the ship date for the entire configuration would be set to 2/2 plus the four day offset for manufacturing lead time*. The group availability date for the configuration is 2/6.

Note: The manufacturing lead time equals the model fixed lead time plus the model quantity times the variable lead time.

Table 8–2 Sample Results of a Group ATP Check

Level	Item	Type	Qty	Requested Date	ATP Date
... 4	... Pentium II	Purchased Item	1	2/1	1/28
.... 5	.... VGA Manual	Purchased Item	1	2/1	2/2
... 4	... Monitor Manual	Purchased Item	1	2/1	2/1

Multi-level, multi-org using the Global ATP Server

Oracle Global ATP Server supports distributed order promising in addition to centralized order promising. It offers multi-level supply chain Available to Promise (ATP), Capable to Promise (CTP) and Capable to Deliver (CTD). In earlier versions of Oracle Applications, ATP checks were for a single level (top level for standard items, down to the option level for models and option classes) of the bills of material and resources. Oracle Global ATP Server offers multi-level bills of material and resource checks.

In the Laptop example above, if the CPU items (Pentium I, Pentium II) are sourced from supply chain (e.g. another organization), the Global ATP Server will check for the availability of the CPU item at the source when there is shortage.

In addition to manufacturing lead time, it will also take into account the inter-org shipping time between source and destination.

If the sourced item happens to be a model, ATP will check for the availability of all its components in the source org.

Multi-level, multi-org, or purchased configurations require the global ATP server. For a multi-level or multi-org order the ATP results will be shown for the top model line only. This record will display a group availability date and available quantity. You can get components details from the ATP Pegging tree which is now accessible from the ATP results window.

In the Laptop example above, if the Laptop was sourced, the ATP results would return a single line for the Laptop Computer with an availability date of 2/6.

Oracle Advanced Supply Chain Planning and Global ATP Server User's Guide provides detailed description on how to setup and use Global ATP Server for order promising.

Create Configuration Items

Topics covered in this chapter include:

- [Create Configuration Items](#) on page 9-2
- [Configuration BOM](#) on page 9-8
- [Configuration Routing](#) on page 9-11
- [Configuration Lead Time Calculation](#) on page 9-11
- [Configuration Item Cost Rollup](#) on page 9-11
- [Configuration Purchase Price Calculation](#) on page 9-14
- [Batch vs. Online Mode](#) on page 9-17
- [Preconfiguring Items](#) on page 9-19

Create Configuration Items

After a sales order for an ATO model is scheduled, you can create unique configuration items, bill of materials, and routings for every configurable level in your model bill of material. If a model is sourced, its corresponding configuration item will be enabled in both sourcing and receiving organization in addition to the item master, validation organizations. The bill of material and routing will be created in the sourcing organization. You can also establish the cost and lead time for these configuration items. This chapter explains in detail the process of creating configuration items.

Process Description

Creating configuration items for an ATO model order line completes the following tasks:

- Creation of a configuration item
- Creation of configuration bill of material based on the model bill of material
- Creation of configuration routing based on the model routing
- Link the configuration item to the sale order
- Kick off the configuration item workflow process, which completes the following:
 - Lead time calculation for the configuration item (discrete manufacturing items only)
 - Supply Chain cost rollup for the configuration item

Configuration Item

A configuration is created for every non-phantom model in your bill of material in the OE Item validation org.

The configuration item numbers are determined by the Numbering Method parameter specified in the BOM parameters of the item validation organization.

If profile BOM: Match to Existing Configuration is set to Yes, the system will attempt to find an existing matching configuration item. If it is found, the system will use the matched configuration item instead of creating a new item. If the profile BOM: Automatic Reservations is set to Yes, and you are within the OM: Reservation Time fence, a reservation to available on hand will be automatically

performed. Match is organization independent. For more information on matching, please see Chapter 7.

If your model has a "buy" type sourcing rule, or "buy" type planning flag on the item master, autocreate config will generate a supplier-type, long-text attachment for the new configuration item. This file will contain the configuration details - the Model, Option Classes, and Options chosen.

The weight and volume of the configuration will be calculated. For more information, see the Configure to Order Chapter in the *Oracle Bills of Material User's Guide*.

The configuration item is assigned to all the item categories to which the model was assigned, with the exception of the sales and marketing category. There is a custom program that can be used to assign the item to other categories. Details of this package is documented at the end of Chapter 2.

The default sub-inventory and default locator are also copied from the model to the configuration item.

Configuration items will be enabled in all organizations in which the model was enabled. The configuration item inherits most of its attributes from the model. However, there are a series of attributes that are specifically set by the autocreate configuration process. The tables below contain the details of which item attributes on the configuration item are hard coded by CTO, and which are specifically not populated during the autocreate process. All other attributes are inherited from the model.

Hard Coded Item Attributes

These attributes are hard coded to the value listed in the table by the autocreate configuration process.

Table 9–1 Hard Coded Item Attributes

Item Master Tab	Attribute Name	Column Name (Table: MTL_SYTEM_ITEMS)	Value
N/A	Organization	ORGANIZATION_ID	Organizations in which item is created
Main	User Item Type	item_type	Based on Profile BOM: Configuration Item Type
Inventory	Inventory Item	inventory_item_flag	Y

Table 9–1 Hard Coded Item Attributes

Item Master Tab	Attribute Name	Column Name (Table: MTL_SYTEM_ITEMS)	Value
Inventory	Stockable	stock_enabled_flag	Y
Inventory	Transactable	mtl_transactions_enabled_flag	Y
Inventory	Reservable	reservable_type	1 (Yes)
Bills of Material	Base Model	base_item_id	Base Model's Item Id
Bills of Material	BOM Allowed	bom_enabled_flag	Y
Bills of Material	BOM Item Type	bom_item_type	4 (Standard item)
Costing	Include in Rollup	default_include_in_rollup_flag	Y
Purchasing	List Price	LIST_PRICE_PER_UNIT	Calculated based on pricing setup
Purchasing	Purchased	purchasing_item_flag	Y
Purchasing	Purchasable	purchasing_enabled_flag	Y
Physical Attributes	Unit Volume	unit_volume	Calculated based on options selected
Physical Attributes	Unit Weight	unit_weight	Calculated based on options selected
Work in Process	Build in WIP	build_in_wip_flag	Y
Order Management	Assemble to Order	replenish_to_order_flag	Y
Order Management	Check ATP	atp_flag	N
Order Management	Customer Ordered	customer_order_flag	Y
Order Management	Customer Orders Enabled	customer_order_enabled_flag	Y
Order Management	Internal Ordered	internal_order_flag	Y
Order Management	Internal Orders Enabled	internal_order_enabled_flag	Y
Order Management	OE Transactable	so_transactions_flag	Y
Order Management	Pick Components	pick_components_flag	N

Table 9–1 Hard Coded Item Attributes

Item Master Tab	Attribute Name	Column Name (Table: MTL_SYTEM_ITEMS)	Value
Order Management	Shippable	shippable_item_flag	Y
Invoicing	Invoice Enabled	invoice_enabled_flag	N
Invoicing	Invoiceable Item	invoiceable_item_flag	N
N/a	{Hidden Field}	INVENTORY_ITEM_ID	Generated from sequence
N/a	{Hidden Field}	segment<n>	<n> is the number specified in BOM parameter 'Config segment number' and this segment will be populated by CTO based the 'config numbering method' BOM parameter. All other segments will inherit the model value.
N/a	{Hidden Field}	auto_created_config_flag	Y

Item Attributes that are hard coded if Model value is null

These Attributes are hard coded if the Model value is null, otherwise they are inherited from the Model.

Table 9–2 Hard Coded Item Attributes for a Null Model Value

Item Master Tab	Attribute Name	Item Attribute	Hard Coded value if Model value is null
Bills of Material	Effectivity Control	effectivity_control	1 (Date)
Physical Attributes	[Weight] Unit of Measure	weight_uom_code	Base UOM of the UOM Class

Table 9–2 Hard Coded Item Attributes for a Null Model Value

Physical Attributes	[Volume] Unit of Measure	volume_uom_code	Base UOM of the UOM Class
MPS/MRP Planning	Create Supply	create_supply_flag	Y
Order Management	Default SO Source Type	default_so_source_type	Internal

Item Attributes that are not populated

These attributes are not populated by the autocreate config process.

Table 9–3 Item Attributes Not Populated

Item Master Tab	Attribute Name	Item Attribute
Receiving	[Overreceipt Quantity Control] Action	QTY_RCV_EXCEPTION_CODE
Physical Attributes	[Type] Event	EVENT_FLAG
Physical Attributes	[Type] Electronic Format	ELECTRONIC_FLAG
Physical Attributes	[Type] Downloadable	DOWNLOADABLE_FLAG
MPS/MRP Planning	Release Time Fence	RELEASE_TIME_FENCE_CODE
MPS/MRP Planning	[Release Time Fence] Days	RELEASE_TIME_FENCE_DAYS
MPS/MRP Planning	Forecast Control	ATO_FORECAST_CONTROL
MPS/MRP Planning	[MPS Planning] Calculate ATP	MRP_CALCULATE_ATP_FLAG
Service	[Serviceable Product] Recovered Part Disposition	RECOVERED_PART_DISP_CODE
Service	[Serviceable Product] Defect Tracking Enabled	DEFECT_TRACKING_ON_FLAG
Service	[Installed Base] Asset Creation	ASSET_CREATION_CODE

Table 9–3 Item Attributes Not Populated

Item Master Tab	Attribute Name	Item Attribute
Service	Provisionable	COMMS_ACTIVATION_REQD_FLAG
Web Option	Orderable on the Web	ORDERABLE_ON_WEB_FLAG
Web Option	Back Orderable	BACK_ORDERABLE_FLAG
Web Option	Web Status	WEB_STATUS
N/a	{Hidden Field}	VOL_DISCOUNT_EXEMPT_FLAG
N/a	{Hidden Field}	COUPON_EXEMPT_FLAG

Configuration BOM

The configuration item bill of material will be created only in the organizations where they are need to manufacture or procure the configuration. Details on where they are created are listed in the examples below.

The configuration item bill of material will contain the chosen options and all mandatory components whose effective date is less than the scheduled ship date AND disabled date is greater than or equal to the estimated release date. The estimated release date is the schedule ship date minus the fixed lead time of model in the manufacturing organization plus the order qty times the variable lead time of model in the manufacturing organization.

Attention: It is possible that an option you chose on the sales order line may not be included in the configuration BOM. If this happens, you will be given a warning on-line if you are progressing the order manually or the autcreate config batch program will complete with a warning. In addition, the order line will be put on 'Autocreate Config Exception' hold. You will need to manually remove the hold before being able to create supply for this item. Reasons for this failure may be:

1. An item selected in order management is not effective at the time manufacturing needs to begin (see paragraph above)
 2. An item selected in order management is not on the model BOM in the org where the BOM is being created.
-
-

After upgrading to Discrete Manufacturing Family Pack I (11.5.10), the items on new configuration BOMs will be sequenced such that the Item Sequence reflects the logical sequence on the original Model and Option Class BOMs. The Item Sequence increment will be based on the profile "BOM: Component Item Sequence Increment. Note that if the same option appeared more then once on the indented model structure, and was assigned to the same operation sequence, it will be combined into one entry under the first parent. BOM's created before upgrading to MFG Family Pack I will not be restructured.

Example 1: Single level, Single Organization example:

In a single org environment, configuration is assembled and shipped from the same organization (Shipping organization). The model bill of material from the shipping

organization is used for the creation of a configuration bill of material. The configuration bill of material is only created in the shipping organization.

The following table shows the bills of material for the Laptop Computer from Example 1 in Chapter 1. The Selected column indicates the option selection during order entry.

Table 9–4 BOM for Laptop Computer Example

Level	Item	Item Type	Optional	Selected
.1	. Laptop Computer	ATO Model	No	Yes
..2	.. CPU	ATO Option Class	No	Yes
...3	... Pentium I	Purchased	Yes	-
...3	... Pentium II	Purchased	Yes	Yes
..2	.. Monitor	ATO Model (phantom)	No	Yes
...3	... VGA	ATO Option Class	Yes	Yes
....4	.... VGA Manual	Purchased Item	No	-
....4	.... VGA1	Purchased Item	Yes	Yes
....4	.... VGA2	Purchased Item	Yes	-
...3	... EGA	ATO Option Class	Yes	-
....4	.... EGA1	Product	Yes	-
....4	.... EGA2	Product	Yes	-
...3	... Monitor Manual	Purchased Item	No	-

The following table shows the configuration bill of material. Notice that the configuration BOM looks like a single level bill with models and option classes as components.

Table 9–5 Single Level Configuration BOM

Level	Item	Item Type	Optional	Selected
.1	. Laptop Computer*001	ATO Item (Configuration)	No	Yes

Table 9–5 Single Level Configuration BOM

. . 2	. Laptop Computer	ATO Model	-	-
. . 2	. . CPU	ATO Option Class	No	Yes
. . 2	. . Pentium II	Purchased	Yes	Yes
. . 2	. . Monitor	ATO Model (phantom)	No	-
. . 2	. . VGA	ATO Option Class	Yes	Yes
. . 2	. . VGA Manual	Purchased Item	No	-
. . 2	. . VGA1	Purchased Item	Yes	Yes
. . 2	. . Monitor Manual	Purchased Item	No	-

Example 2: Multi-level, Multi-organization example

In a multi-organization set-up, the model bill of material in the sourcing organization is used for the creation of a configuration bill of material. The configuration bill of material is only created in the respective sourcing organization.

Assuming the same options were selected as in Example 1, but the set-up has changed to the multi-level, multi-organization of example 2 in chapter 1, the following tables show the configuration bills of material in the respective manufacturing (sourcing) organizations. Notice that the Laptop configuration BOM has the monitor configuration as a sub-assembly.

Table 9–6 Multi-level Configuration BOM in M1

Level	Item	Item Type	Optional	Selected
.1	. Laptop Computer*001	ATO Item (Configuration)	No	Yes
. . 2	. Laptop Computer	ATO Model	-	-
. . 2	. . CPU	ATO Option Class	No	Yes
. . 2	. . Pentium II	Purchased	Yes	Yes
. . 2	. . Monitor*001	ATO Item (Configuration)	Yes	Yes

Table 9–7 Multi-level Configuration BOM in M2

Level	Item	Item Type	Optional	Selected
..2	.. Monitor*001	ATO Item (Configuration)	No	Yes
..2	.. Monitor	ATO Model	No	Yes
..2	.. VGA	ATO Option Class	Yes	Yes
..2	.. VGA Manual	Purchased Item	No	-
..2	.. VGA1	Purchased Item	Yes	Yes
..2	.. Monitor Manual	Purchased Item	No	-

Example 3: Purchased Configuration

In the case of a purchased configuration, the entire model BOM should be defined in the receiving organization. The entire configured BOM would also be created in the receiving organization.

Configuration Routing

The model and option class routings from the sourcing organization is used for the creation of configuration routing. In a single organization environment, the routing in the shipping organization is used. If the configuration is purchased, the routing assigned to the model in the receiving organization will be used.

Configuration Lead Time Calculation

If the configuration item has a discrete routing, the configuration manufacturing and cumulative lead times are calculated for the configuration item based on the configuration item routing. This calculation is done in the sourcing organization.

Configuration items with flow manufacturing routings inherit the lead times from the model item master in the appropriate sourcing organization.

Configuration Item Cost Rollup

During the autcreate configurations process, CTO copies the cost of the base model to the configuration item in each organization in which the configuration item is assigned. Costs are copied in the valuation cost type of the costing organization. The user-defined cost is copied in all types of costing organizations. In Average,

LIFO and FIFO costing organizations, the cost in the respective rate types is also copied.

After the BOM and Routing has been created and the list price of the item has been calculated, CTO calculates the cost of the configuration item using a single level cost roll-up. For 'Make' configurations, the cost is rolled up by adding up the valuation costs of all the components in the configuration BOM for which 'Include in cost rollup' flag is set to 'Yes'. This is the total "Rolled up Cost" for the configuration. The cost is calculated in the 'manufacturing' organization.

If a configuration item is purchased, an entry will be created in the cost type specified in the profile 'BOM: CTO Buy Cost type,' based on the list price of the configuration in the PO Validation Organization. This cost is the total "Rolled up Cost" for the configuration.

A non-updateable cost type "CTO" has been seeded to facilitate costing of configurations. A single level cost rollup is performed in the CTO cost type, using the cost type specified in the profile 'BOM: CTO Buy Cost type' as the buy cost type. For make configurations, since this cost-type holds no costs for the model and options, the roll-up will be done based on the valuation cost of the model and options, and an entry for the configuration will be placed in the CTO cost type. .

If the organization is using standard costing, CTO will then update the frozen cost of the configuration with the cost rolled up in the CTO cost type. If the costing organization is an average, LIFO, or FIFO organization, the valuation cost of the item is not updated and the cost in CTO cost type serves as an estimated cost.

In the case of Multi-level configuration items, CTO performs the above steps for all configuration items in the BOM, starting with the lowest level configuration item. Cost of the parent configuration uses the cost of the child configuration from the CTO cost type. For procured configurations, the cost specified in the profile 'BOM: CTO Buy cost type' is used as the 'Buy cost', and is included in the roll-up of the parent configuration.

Note: The cost in the buy cost type will be used in the rollup only if the configuration has a buy type sourcing rule in the assignment set defined by MRP: Default Assignment Set. If a configuration is procured, but does not have buy type sourcing rules, it will be treated as a manufactured item for the purposes of cost rollup.

If a configuration is transferred from one organization to another, a single level cost roll-up is performed first in the manufacturing or procuring organization, then in

the receiving org as described above. For more information on cost roll-up, see the *Oracle Costing User's Guide*.

CTO does not perform an automatic cost roll-up for preconfigured items. However, the user defined and item costs are copied to the pre-configured item.

Note: Do not perform a cost roll-up on the model itself. The model is not expected to have a rolled up cost since it is not a standard item, and will cause your pre-configured item cost to be incorrect.

Costing of Matched Configurations

If the profile 'Match to Existing configurations' has been set to 'Yes', the autcreate configuration process may find a match to an existing item. The matched item may be an autcreated or pre-configured item for which cost in the current organization may or may not have been previously rolled up. CTO will decide whether or not to perform a cost rollup of a matched configuration based on the following rules:

1. In a standard cost organization:
 - a. If the item has already been transacted in the current organization, CTO will not perform a cost roll-up. It will simply update the CTO cost type of the item with the existing frozen cost.
 - b. If the item has not been transacted, and the item sourcing has changed from make to buy or vice versa, CTO will recalculate the cost. Otherwise, CTO will not recalculate the cost.

Note: If you have manually changed the frozen cost of the configuration before it has been transacted, it will be over-ridden by the roll-up cost calculated by CTO.

2. In an average, FIFO, or LIFO organization:
 - a. If a cost already exists in the valuation cost type, CTO will not perform a roll-up. It will simply update the CTO cost type of the item with the existing frozen cost.
 - b. If the item does not have a valuation cost, and the item sourcing has changed from make to buy or vice versa, CTO will recalculate the cost. Otherwise, CTO will not recalculate the cost.

Configuration Purchase Price Calculation

During AutoCreate Config or when matching to an existing configuration, CTO will perform a price calculation for any configuration generated from a “buy” model or a model with “buy from” sourcing rules. The price calculation is done in the following ways:

Using List Prices

During autocreate config, CTO will rollup the list prices of the model, options, option classes, and sub-models in the PO validation org of the receiving organization’s operating unit, and insert the value as the list price for the configuration in the PO validation org. Unless you choose to overwrite the existing prices by using the batch program, CTO will not perform the calculation if there is already a list price on the configuration. We do not automatically overwrite because you may be matching to an existing pre-configured item with a negotiated list price, or using of the custom purchase price program.

Using Blanket Purchase Orders for Models

CTO will calculate a rolled-up price for each blanket associated with a valid supplier, supplier site combination listed in the global ASL for the Base Model. The price is the sum of the prices of the model, option classes, and options on the blanket order defined in the global ASL for the model. If there is no price on the blanket for a given item, its list price from the PO validation org will be used in the roll-up.

CTO creates a blanket line for the configuration in the blanket of the model. To achieve this, CTO inserts a row in the PDOI tables with the information to create the blanket line and then launches PDOI with ‘create sourcing rules’ equal yes and ‘release method’ equal to the one specified in the profile option BOM: CTO Default Blanket PO Release Method. This will create:

- A new row for the config item in the model’s blanket purchase order with the rolled up price
- A new global ASL for the configuration with the appropriate supplier, supplier site, and source documents
- A sourcing rule if one doesn't exist for the Item-Supplier/site combination
- An item level sourcing assignment for the configuration (if one did not already exist)

CTO will not perform the calculation if there is already an entry for the configuration in a given blanket. This may happen if you are matching to an existing configuration, or are using one of the custom purchase price programs.

CTO also provides CTO Purchase Price Calculation concurrent program to calculate the purchase price for any sales order. This can also be used to recalculate a price if the autocreate config program is unable to calculate the price for any reason. It should also be used to recalculate blanket prices for all open sales orders on the day you cut over to a new blanket for a model.

You can launch this concurrent program from the Bills of Material > ATO menu. The program supports the following parameters:

Sales Order Number: You can specify a specific sales order number. If the parameter is blank, it will create the configurations for any eligible sales orders.

Sales Order Line: If you have entered a specific sales order, you can also specify a specific sales order line. If the parameter is blank, it will create the configurations for any eligible lines.

Organization Code: You can optionally specify an organization. Only those sales orders with this organization as the shipping warehouse will be processed.

Offset Days: The program will calculate the price for only those sales orders that are scheduled to ship on or before the system date plus the offset days (using BOM calendar days).

Overwrite List Price: If you specify Yes, the program will overwrite existing list prices on the configuration items for which it is performing the calculation. If you specify No, the program will not overwrite existing list prices. The default is No.

Note: CTO will not wait for PDOI to complete successfully to progress the workflow further. Users will need to monitor the PDOI requests and in case of errors, and will need to launch and look at the PDOI error report, fix the set-up, then use the batch program to re-calculate the price. If the user does not monitor the PDOI error log and a given configuration does have errors so that there is no blanket created for the configuration, the requisition will still be created successfully. However, it will be placed in a buyer's pool to validate and enter the price. The buyer could manually re-launch the Purchase Price Calculation batch program to re-calculate a valid price for the configuration.

Please see the Purchase Price Calculation Section of Chapter 9 for details on the set-up required for these calculations.

Please see the *Oracle Purchasing User's Guide* for more details on PDOI, blankets and ASLs.

Using Custom Hooks

If users prefer to do their own price calculation, CTO now provides two custom hooks in autocreate config. Please see the Purchase Price Calculation Section of Chapter 4 for more details on these programs.

Batch vs. Online Mode

You can launch the AutoCreate Configuration Items concurrent program to create configuration items for one or more sales orders. You can also create a configuration item for a single sales order line online from the Sales Order Pad Action button (Progress Order).

AutoCreate Configuration Items

You can launch this concurrent program from the Bills of Material menu. The program supports the following parameters:

Sales Order: You can specify a specific sales order number. If the parameter is blank, it will create the configurations for any eligible sales orders.

Release Offset Days: Only those sales orders for which the expected release dates for the final assembly work orders are within the release offset days specified.

The program calculates an expected work order release date using the following formula:

Schedule Ship Date - Order Lead Time

Example: Schedule Ship Date = 6/20/2000

Order Quantity = 10

Fixed Lead Time = 1 day; Variable Lead Time = .5 day

Result: 6/20/2000 - ((10 *.5) + 1) = 6/12/2000 (excluding 2 weekend days)

If today is 6/9/2000 and Release Offset Days is set to 5, this order will be processed.

Organization: You can optionally specify an organization. Only those sales order with this organization as the shipping warehouse will be processed.

Perform Leadtime Calculation: If you specify Yes, manufacturing and cumulative lead times are calculated for the configuration item based on the configuration item routing. If you specify No, the configuration item lead-time attributes default from the base model.

This parameter gets defaulted from the profile BOM: Perform Lead Time Calculations and is valid only for items with a discrete routing

Perform Flow Calculation: If you specify Yes, Total Product Cycle Time, Yield, Net Planning %, Operation times will be calculated for your processes, operations and

events in the configuration flow routing. If you specify No, those data will be copied from the model.

Sales Order Pad Action Button - Progress Order

You can create a configuration item for one sales order line from the Sales Order Pad. By default, this mode does not give you the option to perform lead time calculation or flow routing calculations and it will always calculate both. However, you can remove the Lead time calculation activity from the workflow, if you do not want to perform lead time calculations.

Preconfiguring Items

You can invoke Oracle Configurator from within Oracle Bills of Material to create a configured bill of material and routings for a pre-defined ATO item. This is very useful in a business to business environment where the same configuration is ordered repeatedly. Preconfigured items can be built to forecast and kept on hand. Customers can order the preconfigured items directly, as they would a standard ATO item.

You are able to pre-configure multi-level structures within BOM in a manner similar to that done in Order Management. The configurator will use the item validation organization defined in the OM parameters form for the current organization to determine the BOM to present during the configuration session. Once the options are chosen, the sourcing rules on the models will be used to determine the organizations in which to create the BOM and Routings. A profile option BOM: Use OM Validation Org When Pre-Configuring Single Level Items determines whether the current organization or the OM validation organization is used when preconfiguring a single level BOM. Usually, this value should be set to Yes. See Chapter 2 for more information on setting profile options.

This process will match to existing configurations, if the BOM: Match to existing configuration profile is set to Yes. If the program finds a match, for the top level model, you will be asked if you want to use the matched item id, or create a new configuration for the new item. If you choose to use the match, no BOM will be created for the current item. If you choose to create a new configuration for the new item, the new configuration will replace the old configuration in the match tables, such that future matches in OM or BOM will match to the new pre-defined configuration.

If a match is found for any of the lower level models, matched config item will be used by default.

Note: If you try to preconfigure an item based on a model that is sourced entirely from another organization, you will receive an error asking you to go to the source organization to configure the item.

Note: For preconfigured items, since the item is created by the user, item attributes are not copy from or validated against the base model item attributes. It is up to the user to set them appropriately.

Note: You cannot preconfigure an alternate BOM. If a routing already exists for an ATO Item having a base model, and then the user pre-configures the bill for the ATO Item, no new routing gets created after preconfiguring. The user will get a message "A routing already exists for the ATO item in current org"

The BOM:Configurator URL profile option must be set properly to enable you to call the configurator from within BOM. See Chapter 2 for more information on setting profile options.

To preconfigure an item:

1. Create a new item in the master organization and assign it to the appropriate manufacturing organization. On the BOM tab of the item master, set the base item to the model from which you want to derive the configuration.
2. In the manufacturing organization, create a new bill of material for the item with no components. Put the cursor in the components region. Go to the Tools menu and choose Configure Bill. This will bring up the configurator where you can pick your options. Once done, this item can be planned, ordered and stocked just like any standard item.

Preconfiguring Items Example:

As mentioned above, preconfiguring items will respect the multi-level structure and the sourcing rules you have defined for models at all levels of the BOM. As an example, use the multi-level, multi-org example of chapter 1:

If you went in to the warehouse, W1, added a new item based on your Laptop Computer model, and then tried to "pre-configure" a BOM, the program would give you a message asking you to go to Org M1 to configure the item (since the entire item is sourced from M1). If you go to M1 and try to preconfigure the BOM, the program will invoke the configurator based on the item validation org defined in the OM parameters for the given organization. You would be able to choose options for all levels of your Bill, regardless of where they will be manufactured.

Then, when done, the program will create the BOMs and routings in the appropriate organizations based on the sourcing rules. In the case of this example, a configured laptop computer BOM and routing will be created in M1, and a configured monitor item and routing would be created in M2. You will get a message when the program completes indicating that the BOMs were created in the appropriate organizations.

Supply Unique Configurations

Topics covered in this chapter include:

- [Overview to Supplying Unique Configurations](#) on page 10-2
- [Discrete Manufacturing](#) on page 10-2
- [Flow Manufacturing](#) on page 10-9
- [Purchasing](#) on page 10-13
- [Reserve Supply](#) on page 10-21

Overview to Supplying Unique Configurations

You can create final assembly work orders, flow schedules or purchase requisitions to supply configurations and ATO items. The details of each is described below.

Discrete Manufacturing

Oracle Work In Process User's Guide provides complete information on how you manage work orders and shop floor activities. The following information is only intended to provide some additional tips and hints on managing work orders in a configuration environment.

Create Final Assembly Work Orders

Oracle Applications provides you with various methods of creating work order to fulfill a configuration sales order. The following table explains the benefits and the implementation consideration of each method.

Table 10–1 Comparison of Methods to Create Final Assembly Work Orders

Method	Description	Implementation Consideration	Reference Document
1.AutoCreate FAS concurrent program	<ul style="list-style-type: none"> - This is a concurrent program that you can launch from Work in Process menu. -It can be run at any frequency you specify to create work orders for the configured assembly. - The top level work order is reserved to the sales order. - Lower level supplies are not reserved to the sales order. 	<ul style="list-style-type: none"> - This program can only be used if your final assembly is manufactured in the shipping organization. In all other cases, advanced planning is used to create planned orders based on the demand in the shipping organization. - Typically used to create supply for short term demand in a single organization environment. -Useful in a single organization, high volume, short product lead time environment where you may need to run this program more than once a day -Creates one work order for the top level assembly for the full order quantity If you have multiple levels of configurations or ATO items in your shipping organization, this program can create supply for the lower level items as well, if the BOM parameter "Create lower level supply" is set properly. Lower level supply can be of any type (work order, flow schedule or PO). Lower level supplies will not be reserved to the sales order. For lower level ATO items or configurations in other organizations, planning must be run to create supply for the lower level assemblies. -This program does not take capacity into consideration - This program will create a work order for the unreserved portion of a sales order line and its sub-assemblies in the shipping organization. - If you have created supply for a lower level purchased configuration through this process, you will need to run requisition import with import source code 'CTO-LOWER LEVEL' to create the requisition. 	<i>Oracle Work in Process User's Guide</i>

Table 10–1 Comparison of Methods to Create Final Assembly Work Orders

Method	Description	Implementation Consideration	Reference Document
2. Progress Order (action) from Sales Order Pad	<p>-From the Sales Order Pad in Order Management, you can invoke Progress Order action to create a work order for an order line.</p> <p>- This creates a work order for the configuration item.</p> <p>- Top level work order is reserved to the sales order.</p> <p>Lower level supplies are not reserved to the sales order.</p>	<p>- This option can only be used if your final assembly is manufactured in the shipping organization. In all other cases, advanced planning is used to create planned orders based on the demand in the shipping organization.</p> <p>-Need to manually progress the order (in Order Management) one at time.</p> <p>-In single organization environment, progress order is a way to create supply for a single order with minimum delay. If you have an urgent order that needs to be pushed to manufacturing, this may be a way to quickly progress an order to production. If you have multiple levels of configurations or ATO items in your shipping organization, this program can create supply for the lower level items as well, if the BOM parameter "Enable lower level supply creation" is set properly. Lower level supply can be of any type (work order, flow schedule or PO). Lower level supplies will not be reserved to the sales order.</p> <p>For lower level ATO items or configurations in other organizations, planning must be run to create supply for the lower level assemblies.</p> <p>-Creates one work order for the top level assembly for the full order quantity.</p> <p>-If you have created supply for a lower level purchased configuration through this process, you will need to run requisition import with import source code 'CTO-LOWER LEVEL' to create the requisition.</p> <p>- This activity will not be accessible from the sales order pad if supply (Discrete job/ Flow Schedule/ Inventory reservations) has been created for this any part of this order line.</p>	<p><i>Oracle Order Management User's Guide</i></p> <p><i>Oracle Advanced Planning and Shipping User's Guide</i></p>

Table 10–1 Comparison of Methods to Create Final Assembly Work Orders

Method	Description	Implementation Consideration	Reference Document
3. Planner's Workbench	<ul style="list-style-type: none"> - Planning can be run periodically to create planned orders based on sales orders for configured product. -From the Planner's Workbench, you can release planned orders to work orders or internal requisitions for configurations. -The work order is not reserved to sales order; 	<ul style="list-style-type: none"> - In a multi-organization, advanced planning must be used to generate planned orders for your configurations. -With Advanced Planning and Scheduling products, a single plan can be used for your entire supply chain. In addition, material and resources constraints can be considered during the planning process. -Enables the planner to manage configured and non-configured demand the same way. -Limited by planning run frequency. -Work orders are not reserved to the sales order. <p>Prior to shipping, users must manually reserve finished assembly to the sales order, or run the Reserve Orders concurrent program to do so automatically.</p>	<i>Oracle Master Scheduling /MRP User's Guide</i>

Table 10–1 Comparison of Methods to Create Final Assembly Work Orders

Method	Description	Implementation Consideration	Reference Document
4. Create Discrete Job	<p>-You can manually create a job for a configured item.</p> <p>- If the top level configured assembly is being manufactured in the shipping organization, it's work order can be reserved to the sales order.</p> <p>-You can reserve the work order to multiple sales orders.</p>	-Manual process, only used for exceptions.	<i>Oracle Work in Process User's Guide</i>

Autocreate FAS Batch Program

Please see the *Oracle Work in Process User's Guide* for details of the AutoCreate FAS batch program.

Work Order Reservation

If you use method 1 & 2 (see above) to create the work order for top level configurations, the top level work order is automatically reserved to the sales order. If you use method 3 & 4 for a top level configuration that is manufactured in the shipping organization, you can manually reserve the work order to the sales order (if necessary).

If your product is manufactured in an organization other than your shipping organization, you can reserve the material for the sales order after it has been received in the shipping organization. The reservation can be done manually from the sales order, or by using the Reserve Orders batch process provided by Order

Management. Work orders in other organizations will not be reserved against the sales order.

Lower level supplies are not reserved to the sales order.

Complete an Assembly

When a work order for the top level configuration has been reserved to the sales order, the finished assembly will be automatically reserved against the sales order when you complete the assembly from WIP.

Note that you will not be able to see the job number on the sales order once the job has been completed.

Perform an Assembly Return

When you perform assembly return from WIP on a work order that had been reserved to a sales order, the system will automatically un-reserve the on-hand inventory from the sales order. However the system will not automatically reserve the work order to the original sales order. If you need to reserve the work order to the original sales order or to a different sales order, you can do this by entering the sales order number in the WIP Completions form when you perform return transaction.

Transfer Reservation from One Sales Order to Another

If you need to transfer WIP reservation from one sales order to another sales order, you need to delete the existing WIP reservation for sales order 1 and add a new reservation for sales order 2. Sales order 1 and sales order 2 must have the same configuration item.

You can do this in Discrete Job form in Oracle Work In Process.

For more information about discrete work orders, please See: *Oracle Work In Process User's Guide*.

Supply Chain Execution in a Multi-Organization Environment

In a multi-organization environment, advanced planning is used to generate and manage planned orders across the supply chain for all levels of the configuration. In the multi-organization example in chapter one, an order is taken for a configured laptop. Advanced planning is run and creates the following planned orders:

1. Planned internal requisition in the shipping organization (W1) to source the configured laptop from organization M1.

2. Planned work order for the configured Laptop in organization M1.
3. Planned internal requisition in organization M1 to source the configured monitor from organization M2.
4. Planned work order for the configured monitor in organization M2.
5. Planned purchase requisitions for any material that is needed in either M1 or M2 to fulfill the order.

The planner would release all planned orders to create the appropriate work orders and requisitions. Internal requisitions are converted to internal sales orders via a background process, and purchase requisitions are converted to purchase orders via the normal purchasing process.

M2 manufactures and completes the monitor, then ships it to organization M1. M1 manufactures and completes the laptop, then ships it to organization W1. The laptop is reserved to the sales order, picked and shipped.

A generic process flow describing this is presented in Chapter 1.

For more information about Advanced Planning and Scheduling, please See: *Oracle Advanced Planning Users Guide*.

For more information about Purchasing, please see: *Oracle Purchasing Users Guide*.

For more information about internal orders, please see: *Oracle Inventory User Guide*

Flow Manufacturing

Oracle Flow Manufacturing Implementation Manual and user's guide provides complete information on implementing flow manufacturing at your facility. The manual covers flow line design, line balancing, production execution and kanban planning and execution.

The *Oracle Flow Manufacturing Implementation Manual* explains how flow manufacturing supports building customized products. See: *Oracle Flow Manufacturing Implementation Manual*.

The following information provides some additional tips and hints when you deploy flow manufacturing in a configure to order environment.

Create Final Assembly Flow Schedules

Oracle Applications lets you create flow schedules via the Line Scheduling Workbench in Flow Manufacturing or the Sales Order Pad in Order Management. The following table provides some explanation of each method.

Table 10–2 Comparison of Methods to Create Flow Schedules

Method	Description	Implementation Consideration
1. Line Scheduling Workbench or the Flow Schedule tab on Flow Manufacturing Self Service	<p>-You can use the Line Scheduling Workbench or the Flow Schedule tab on Flow Manufacturing Self Service"</p> <p>-You can create flow schedules for planned orders and sales orders</p> <p>- Flow schedules created from the sales orders will reference the sales order and order line.</p>	<p>-Scheduler can manage configured and non-configured orders in the same workbench, and can sequence orders according to their scheduling rules.</p> <p>-Scheduling is constrained to the line rate. The scheduler can view orders that could not be scheduled because of the constraint from the same workbench.</p> <p>-Feeder Line Synchronization can be used to create lower level flow schedules.</p> <p>-Advanced Planning and Scheduling must be used for lower level purchased configurations or multi-org configurations.</p>

Table 10–2 Comparison of Methods to Create Flow Schedules

Method	Description	Implementation Consideration
2. Progress Order (action) from Sales Order Pad	<ul style="list-style-type: none"> -A way to create supply for a single order line when the top level configuration is manufactured in the shipping organization - Flow schedules created from the sales orders will reference the sales order and order line. 	<ul style="list-style-type: none"> - Valid only if the top level configuration is manufactured in the shipping organization. -This method provides a way to create production schedules for the top level assembly for urgent orders in a single organization environment. -Need to manually progress the order (in Order Management) one at a time. - Schedules are created first in, first out. No sequencing is performed. The order is scheduled at the first available spot between today plus the manufacturing lead time and the order schedule date. - Scheduling is still constrained to the line rate. This may cause a flow schedule to be created for only a partial quantity. In this case, the scheduler must use the line scheduling workbench to manage the unscheduled portion of the order quantity. -If you have multiple levels of configurations or ATO items in your shipping organization, this program can create supply for the lower level items as well, if the BOM parameter "Enable lower level supply creation" is set properly. Lower level supply can be of any type (work order, flow schedule or PO). Lower level supplies will not reference the sales order. - For lower level ATO items or configurations in other organizations, planning must be run to create supply for the lower level assemblies. - This activity will not be accessible from the sales order pad if supply (Discrete job/ Flow Schedule/ Inventory reservations) has been created for this any part of this order line.
3. Feeder Line Synchronization	<ul style="list-style-type: none"> - Creates flow schedules for configured (and non-configured) sub-assemblies based on the flow schedule for the parent item. 	<ul style="list-style-type: none"> - Valid in a multi-level, single organization environment only - Sub-assemblies are scheduled to complete just when they are required for the parent assembly. - Enables a single organization flow manufacturing company to produce multi-level configurations to order without running planning.

Flow Schedules and Order References

Top level flow schedules that are created from sales orders are referenced - not reserved - to the sales order. This means you can see the order number and order line on the flow schedule, but you will NOT see the flow schedule number in the reservations form accessible from Order Management or Inventory. Supply for lower level configurations or ATO items will not reference the sales order.

Complete an Assembly

When a flow schedule is referenced to a sales order, the finished assembly will be automatically reserved against the sales order when you complete the assembly using Work Order-less Completions.

Perform an Assembly Return

When you perform assembly return from WIP on a flow schedule that has a sales order reference, the system will automatically un-reserve the on hand inventory from the sales order. The un-completed flow schedule will still be referenced to the sales order.

Supply Chain Execution in a Multi-Organization Environment

In a multi-organization environment, advanced planning is used to generate and manage planned orders across the supply chain for all levels of the configuration. However, in flow, planned orders cannot be released to flow schedules from the planners workbench. Instead, schedulers would implement planned orders from the line scheduling workbench.

In the multi-organization example in chapter one, an order is taken for a configured laptop. Advanced planning is run and creates the following planned orders:

1. Planned internal requisition in the shipping organization (W1) to source the configured laptop from organization M1.
2. Planned work order for the configured Laptop in organization M1.
3. Planned internal requisition in organization M1 to source the configured monitor from organization M2.
4. Planned work order for the configured monitor in organization M2.
5. Planned purchase requisitions for any material that is needed in either M1 or M2 to fulfill the order.

The planner would release planned orders to create the internal requisitions and purchase requisitions. Internal requisitions are converted to internal sales orders

via a background process, and purchase requisitions are converted to purchase orders via the normal purchasing process.

The schedulers in organizations M1 & M2 would go to the line scheduling workbench for their respective lines and schedule the planned orders for flow schedules.

M2 manufactures and completes the monitor, then ships it to organization M1. M1 manufactures and completes the laptop, then ships it to organization W1. The laptop is reserved to the sales order, picked and shipped.

For more information about Advanced Planning and Scheduling, please See: *Oracle Advanced Planning User's Guide*.

For more information about Purchasing, please see: *Oracle Purchasing User's Guide*.

For more information about internal orders, please see: *Oracle Inventory User's Guide*

Purchasing

Oracle Purchasing User's Guide provides complete information on how you manage requisitions and purchase orders. The following information is only intended to provide some additional tips and hints on managing requisitions in a configuration or ATO environment.

Create Purchase Requisitions

Oracle Applications provides you with various methods of creating requisitions to fulfill a configuration or ATO sales order. The following table explains the benefits and the implementation consideration of each method.

Table 10–3 Comparison of Methods to Create Purchase Requisitions

Method	Description	Implementation Consideration	Document
1. AutoCreate Req concurrent program	<p>- This is a concurrent program that you can launch from Bill of Material menu.</p> <p>The program creates a record in the req import table for each order line that meets the program parameters.</p> <p>Note that req import needs to be run to generate the requisition.</p> <p>-It can be run at any frequency you specify to put a record in the req import tables</p> <p>- The requisition, when created, is reserved to your sales order. The reservation is transferred to the purchase order created for the item, and then to inventory upon receipt.</p>	<p>Valid only if the ATO item or configuration is a buy item, or has a buy-type sourcing rule in the shipping org.</p> <p>- ATO items must be "Build In Wip", even if they are being procured.</p> <p>- If you would like requisitions to be created immediately, you can create a request set to launch AutoCreate Req, followed immediately by Req Import. Set the supply type parameter on the req import program to "CTO" to create a requisition only for the items created through the autcreate req process. You can launch it a second time with supply type 'CTO-LOWER-LEVEL' to create a requisition for any lower level procured assemblies (if the parameter "Enable lower level supply creation" is not No).</p> <p>- Typically used to create supply for short term demand in a procure to order environment.</p>	Oracle Purchasing

Table 10–3 Comparison of Methods to Create Purchase Requisitions

Method	Description	Implementation Consideration	Document
2. Progress Order (action) from Sales Order Pad	<p>-From the Sales Order Pad in Order Management, you can invoke Progress Order from 'Create Supply Eligible.' "If the ATO item is a "buy" item or has 'Buy' Sourcing rules, a record will be created in the req import tables</p> <p>-The requisition, when created, is reserved to the sales order.</p>	<p>- Valid only if the ATO item or configuration is a buy item, or has a buy-type sourcing rule in the shipping org -Need to manually progress the order (in Order Management) one at time.</p> <p>- ATO items must be "Build In Wip", even if they are being procured.</p> <p>-In a Procure to Order Environment, progress order is a way to create supply for a single order with minimum delay. If you have an urgent order that needs to be pushed to purchasing, this may be a way to quickly progress an order to production. Note that Req Import needs to be run to actually create the requisition.</p> <p>- This activity will not be accessible from the sales order pad if an inventory reservation has been created for any quantity for this order line.</p>	<i>Oracle Order Management User's Guide</i>

Table 10–3 Comparison of Methods to Create Purchase Requisitions

Method	Description	Implementation Consideration	Document
3. Advanced Planners Workbench	<ul style="list-style-type: none">- Advanced planning can be run periodically to create planned purchase requisitions based on sales orders for configured product.-From the Planner’s Workbench, you can release planned orders to requisitions for configurations.-The requisition is not reserved to sales order	<ul style="list-style-type: none">- Details of the configuration are communicated via text attachments to the PO or can be seen in the iSupplier Portal.-With Advanced Planning and Scheduling products, a single plan can be used for your entire supply chain. In addition, material and resources constraints can be considered during the planning process.-Enables the planner to manage configured and non-configured demand the same way.-Requisitions are not reserved to the sales order.Prior to shipping, users must manually reserve the inventory to the sales order, or run the "Reserve Orders" concurrent program to do so automatically.	<ul style="list-style-type: none">Oracle Advanced Planning and SchedulingOracle Purchasing

Autocreate Purchase Requisition Batch Program

You can launch this concurrent program from the Bills of Material >ATO menu. The program supports the following parameters:

Sales Order: You can specify a specific sales order number. If the parameter is blank, it will create the configurations for any eligible sales orders.

Sales Order Line: If you specified a sale order, you can also specify a specific sales order line. If the parameter is blank, it will create the configurations for any eligible lines on the sales order.

Organization Code: You can optionally specify an organization. Only those sales order with this organization as the shipping warehouse will be processed.

Offset Days: The program will process only those sales orders which are scheduled to ship on or before the system date plus the offset days (using BOM calendar days)

Requisition and Purchase Order Reservation

If you use method 1 & 2 (see above) to create the requisition for an ATO item or configuration, the requisition is automatically reserved to the sales order. When the PO is created, the reservation will be transferred to the purchase order. If you use method 3, you cannot reserve the material to the sales order until receipt into inventory.

Note that you will not be able to see the PO number on the sales order once the entire PO has been received.

Managing Changes in Purchasing

Changes to a requisition (other than requisition cancellation) will NOT be reflected in the reservation to the sales order. Therefore, it is recommended that users never change a req with source type CTO.

If the PO is cancelled without canceling the requisition, the reservation is transferred back to the req. If both are cancelled, the reservation is removed. In the latter case, you can run the autocreate purchase requisition batch program to create a new requisition for sales order.

If a partial PO quantity cancelled, or the PO qty is reduced, then the reservation quantity is reduced accordingly. Again, run the autocreate purchase requisition batch program to create a new requisition for the outstanding quantity.

Note: Once a sales order reservation to the PO has been removed (either automatically or manually), it cannot be manually re-reserved. You can manually reserve on-hand stock to the sales order or the autocreate purchase requisition batch program can pick it up again and create a new supply order along with a new reservation.

Receive an Assembly

When a purchase order has been reserved to the sales order, the inventory will be automatically reserved against the sales order when you receive the purchase order.

Note: This process does not support the receipt of substitute items. The user will be able to receive a substitute item, but the sales order will remain for the original item. The user will have to manually cancel the original order line and add a new line for the substituted item prior to shipment.

Perform an Assembly Return

When you perform a return to vendor on material that had been reserved to a sales order, the system will automatically un-reserve the on-hand inventory from the sales order. However the system will not automatically reserve the purchase order to the original sales order. It is suggested that you close the existing purchase order and let the system generate a new requisition and purchase order for the returned material.

Create Dropship Requisitions

Drop ship functionality allows you to take an order from your customer for ATO and non ship model complete (non SMC) PTO and PTO-ATO hybrid configurations and fulfill it directly from your supplier’s site. The functionality does not support dropshipments of ship model complete (SMC) PTO or SMC PTO-ATO hybrid configurations.

Dropship is implemented for ATO items in the same manner as it is for standard items, which means planning cannot be used. For more details on dropshipping configurations, please see the *Oracle Order Management User’s Guide* and the *Oracle Order Management Implementation Manual*.

Oracle Applications provides you with various methods of creating dropship requisitions to fulfill a configuration or ATO item sales order.

The following table explains the benefits and the implementation consideration of each method.

Table 10–4 Comparison of Methods to Create Drop Ship Requisitions

Method	Description	Implementation Consideration	Document
1. AutoCreate DropShip Req concurrent program	- This is a concurrent program that can be run at any frequency you specify to put a record in the req import tables for external sales order lines	<ul style="list-style-type: none"> - Valid only if the ATO item or configuration order line has supply source type as 'External'. - Creates a record in the req import table for each order line that meets the program parameters. - Note that req import needs to be run to generate the requisition. - If you would like requisitions to be created immediately, you can create a request set to launch AutoCreate DropShip Req, followed immediately by Req Import. - There is no reservation between the req/po and the order line status on the configuration line will remain at "awaiting Receipt" until the line is shipped. 	<i>Oracle Order Management</i>
2. Progress Order (action) from Sales Order Pad	-From the Sales Order Pad in Order Management, you can invoke Progress Order from 'Create Supply Eligible'. If the ATO Item, Configuration. on an external order line, a record will be created in the req import tables -The requisition is NOT reserved to the sales order.	<ul style="list-style-type: none"> - This option is valid only for ATO Items and configurations that are on an external order line. -Need to manually progress the order (in Order Management) one at time. -In a Procure to Order Environment, progress order is a way to create supply for a single order with minimum delay. If you have an urgent order that needs to be pushed to purchasing, this may be a way to quickly progress an order to production. Note that Req Import needs to be run to actually create the requisition. - There is no reservation between the req/po and the order line status on the configuration line will remain at awaiting receipt until the line is shipped. 	<i>Oracle Order Management User's Guide</i>

Autocreate DropShip Requisition Batch Program

You can launch this concurrent program from the Bills of Material >ATO menu. The program supports the following parameters:

Sales Order: You can specify a specific sales order number. If the parameter is blank, it will create the configurations for any eligible sales orders.

Sales Order Line: If you specified a sale order, you can also specify a specific sales order line. If the parameter is blank, it will create the configurations for any eligible lines on the sales order.

Organization Code: You can optionally specify an organization. Only those sales order with this organization as the shipping warehouse will be processed.

Offset Days: The program will process only those sales orders which are scheduled to ship on or before the system date plus the offset days (using BOM calendar days)

Requisition and Purchase Order Link

There are no reservations for drop shipped order lines. To see the requisition or purchase order number that was created for the order, select the external order line, and go to Actions > Additional Line Information > Dropship tab. To manage changes to the order or purchase order, use the OM Sales Order to Purchase order discrepancy report.

Receive an Assembly

You must perform a logical receipt of the purchase order, which will trigger a logical shipment on your sales order. See the *Order Management User's Guide* for more information.

Communicating Configuration Details to Your Supplier

When purchasing a configuration, a purchase order or blanket release is created for the configuration item itself. CTO provides two methods to communicate the configuration details to your supplier: item attachments and the iSupplier Portal.

During AutoCreate Config, CTO creates a supplier-type, item level attachment in the PO validation organization. The attachment contains the models, option classes and options that were chosen during the configuration session. This attachment can be automatically printed, faxed, e-mailed, or transmitted by EDI or XML.

Suppliers can also see details of the purchased configuration from the iSupplier Portal via a link off the PO details page. When clicking on this link, the supplier can

see the model and options that were chosen in order management. They can view any supplier or miscellaneous item attachments on the options, and they can export the data to excel, or download a text version of the file. Please see the [Isupplier Portal](#) on page 4-6 of the document for details on setting up the isupplier portal.

User Item Description

If the user in Order Management enters a User Item Description for an ATO item, it will be used as the description of the item in purchasing. This can enable users to create orders for one time items. In case of a configured item , the base model's user item description will be copied to configuration item, which will be used as the description in PO. For more information on User Item Description, see the *Oracle Order Management User's Guide*.

Reserve Supply

Reservation for an ATO model sales order is placed against the configuration item. The following table describes the various method of reserving a supply.

Table 10–5 Various Methods of Reserving Supply

Supply Type\				
Method	Onhand	Work Order	Req/PO	Description
Automatic	Match action from Sales Order Pad	-	-	<p>-If a match is found, and there is available inventory in the shipping organization, the system gives you an option to make reservation.</p> <p>-The cursor must be on the ATO model order line when you perform the Match action.</p>
-	-AutoCreate Orders from WIP, when the shipping organization is the same as the top level manufacturing organization.	-AutoCreate Orders from WIP, when the shipping organization is the same as the top level manufacturing organization.	-	<p>-If a match is found, if "BOM: Automatic Reservations is Yes", and, if you are within the "OM: Reservation Time Fence" and if there is available inventory in the shipping organization, the system will make an inventory reservation.</p> <p>It will then create a work order for the remaining quantity, and reserve the work order to the sales order line.</p>
-	-	-	Autocreate Req	Autocreate requisitions places a record in the req import tables for each eligible order line. When the requisition is created, it is reserved to the sales order.
-	Work Order Completion Form in WIP	-	-	-If the work order is reserved to a sales order, the reservation is transferred to inventory when you complete finished assembly.
-	Work Orderless Completion Form in Flow Manufacturing	-	-	-When you perform an assembly completion for a flow schedule that is tied to a sales order, the system automatically places a reservation on the finished assembly against the sales order demand for the configuration item.
-	PO Delivery	-	-	When a PO distribution is delivered to inventory, the reservation from the purchase order is transferred to inventory.

Table 10–5 Various Methods of Reserving Supply

Supply Type\				
Method	Onhand	Work Order	Req/PO	Description
Manual	Reservation from Sales Order Pad in OM. (Sales Order Pad -> Tools->Scheduling->Reserve)	-	-	-You can reserve available inventory in the shipping organization to an internal ATO item order line or a configuration order line. -The Cursor must be on the desired order line when you perform reservation.
-	INV Reservations form	-	-	-You can reserve available inventory in the shipping organization to a configuration or an ATO item internal order line via the Reservation window in Inventory
-	-	Discrete Jobs Form in WIP	-	-You can manually reserve a work order for your top level configuration item to one or more sales orders through the Discrete Job window, if the manufacturing organization is the same as the shipping organization.
-	Reserve Orders Concurrent Program	-	-	You can schedule the reserve orders concurrent program to run on a regular basis to reserve your on hand to a sales order automatically. This is especially useful in a multi-organization environment, or any environment where you are using planning to create your supply and the reservation is not done automatically upon completion or receipt.

Supply To Order Workbench

Topics covered in this chapter include:

- [Overview of the Supply to Order Workbench](#) on page 11-2

Supply to Order Workbench

This section describes the various methods of reserving onhand inventory and work orders to an ATO model sales order or ATO item. It also describes reservations made to requisitions and purchase orders for ATO items.

Overview of the Supply to Order Workbench

The concept of the Supply to Order Workbench is to give the customer service representative additional details of a multi-level ATO configuration and top-level supply that is linked to the current sales order for a configuration, ATO item, or Drop Shipped Order line. The goal is to provide them with a single source of information to give their customers accurate order statuses. It is a self-service application that can be accessed through the sales order header or lines, by clicking Actions and choosing “Supply to Order Workbench.”

The Supply to Order workbench is always available in the actions menu. However, if you try to invoke the workbench and there is no valid line for which to display the information, a message is displayed in the status bar informing the user that there are no lines to be displayed. It can be invoked from the order header when the order contains an ATO item, configuration item, or an “external” (drop shipped) order line. It can be invoked at the line level when the user is on an ATO item, configuration item, or an “external” (drop shipped) order line. In both cases, it will be available only after the order has been booked. The workbench will not be invoked until the configuration item is created for ATO model lines.

The workbench “Orders” tab is divided into two pages. The “Supply to Order Lines” and the “Active Supply Page.” Both are explained in detail below.

Supply to Order Lines

The Supply to Order Lines page displays context information from the sales order header at the top of the page. When invoked from order header, it lists all the top-level configuration items, ATO items, or drop shipped standard items for that sales order. When invoked from a line it lists the specific line only. Each line displays the item description, quantity, and line status from Order Management, and an active link that describes the type of active supply associated with the order line. You will be able to see links to WIP Jobs, Flow Schedules, Requisitions, or Purchase orders that are reserved or referenced to the sales order line. Users can click on the active link to go view details of the supply on the Active Supply Details page, described below.

Note: Inventory reservations are NOT shown on this page.

Note: Drop Ship POs details will be displayed even after the drop ship PO has been received. However, all other types of supply will no longer be displayed after the supply order is completed and the reservation has transferred to inventory.

If you have any multi-level configurations, the top-level configuration or will have an arrow indicating there is more information. Click on the arrow to see the indented structure of the configuration items will also be displayed. There is also a expand all and collapse all option. Note that for the lower level configurations, the line number and line status displayed is for the corresponding lower level model, so the user can cross-reference the configuration id shown in the workbench with the sales order line of its base model. Lower level configurations cannot have supply reserved to the sales order, so you will not be able to see any supply details for these configurations.

The Export button is provided for users to export the information in the table to excel.

Active Supply Details

The Active Supply Details Page can only be accessed from the link on the Supply to Order Lines tab for a given sales order line. The page displays context information from the line at the top of the page, then lists all the open supplies (WIP Jobs, Flow Schedules, Requisitions or Purchase Orders) for the sales order line.

Note: Inventory reservations are shown in the header of this page.

This page has three tabs: Main, Work in Progress, and Purchasing. The Main tab contains information relevant to all types of supply: the Supply Type, UOM, Doc Number, Status, Expected Completion Date, and Need by Date.

The WIP tab contains details specific to WIP jobs: Job start date, Start Quantity, Scrap Quantity and WIP Job Lot Number. The Purchasing tab contains details specific to purchasing: Document Revision, Line, Supplier, and Supplier Site. The

user could add Job or PO descriptive flex fields to the tabs by personalizing the page:

To return to the Orders page, click Back.

Personalizing the Supply to Order Workbench

Only the Administrator user can personalize a page. The user can personalize for a responsibility, Function, or Localization. Below is a summary of steps required to personalize the Supply to Order Workbench. For additional details, please see the *OA Framework User's Guide*.

1. Login to application as the system administrator.
2. Make sure Personalize Self-Service Defn profile is set to 'Yes' at your user/responsibility level.
3. Make sure Disable Self-Service Personal profile is not set to 'Yes' at your default/user/responsibility level.
4. Query the sales order and invoke the Workbench.
5. Now the workbench will have links "Personalize Region" on top of every region.
6. Click on the link to personalize that region, which will take you to a new page.
7. Choose Personalization Level at either the Site, Organization, or Responsibility level.
8. Click Next. This will take you to the next screen.
9. Enter the responsibility or Site name.
10. Click Next.
11. This will bring up the last page to create or update the personalization. If there is an existing personalization, you can modify it. Otherwise you can create new personalization.
 - The label of the region can be modified by entering a value in the new label field.
 - The order of the column displayed can be changed.
 - New columns can be added by moving column from available column list to column displayed list.
 - Columns can be removed from the display by moving the columns from the 'column displayed' list to the 'column available' list.

- To change the column labels, press the advanced setting button. This will bring a new page and you can edit the column label in the New Column Label column.
- For table regions, you can modify the sorting fields or enter a new sorting field in sorting settings. You can also give filtering condition for the table data by entering condition for each/any of the columns displayed.

12. Click Apply in all pages to save the changes.

This will save the personalization and make it effective for the site, organization or responsibility.

Pick Release and Ship Confirm

This chapter provides information on:

- [Pick Release and Ship Confirm](#) on page 12-2

Pick Release and Ship Confirm

Once the assembly has been received into inventory in your shipping organization, the sales order is ready to be picked and shipped to customer. If your top level assembly was made in or bought for your shipping organization, and the supply was reserved or referenced to the sales order, the resulting on-hand inventory will be reserved to the sales order and your sales order will automatically be eligible for shipping. If your supply was created via planning, you will need to manually reserve the material to your sales order before you can proceed to shipping. This chapter provides explanation of some settings for configured order that will affect shipping for configured products.

For a complete guide on shipping, please refer to *Oracle Shipping Execution User's Guide*.

Setup

Item Attribute

Ship Model Complete: If this attribute is set to Yes, the entire configuration must be delivered in the same shipment. If the attribute is set to No, components can ship separately. ATO models are inherently ship together models. If you have a PTO model which has an ATO model and some other PTO options underneath, and you want to ship the PTO options along with the ATO model, then Ship Model Complete must be set to Yes on the PTO model.

BOM Attributes

The following shipping attributes are on the Bills of Material window.

Include On Shipping Docs: Indicates whether the component will be printed on external shipping documents such as pack slips and commercial invoices. For example, for an ATO model, it may be more reasonable to print the order lines, ATO model, and options on the shipping documents, in addition to the configured item.

Required to Ship: Indicates whether the component is required to ship the order. You can only update this check box if the Assemble to Order item attribute for the assembly item in the Define Item window is disabled.

This attribute only affects PTO included items (not ATO items or configurations).

Staging Sub Inventory

Your staging sub-inventory **MUST** be reservable in a configure to order environment.

Profiles

The profile WSH: Retain ATO Reservations determines whether or not reservations are maintained when backordering an ATO item or configuration. If the profile is set to Yes, then reservations will not be removed for backordered ATO items/Models, but will be updated to Unstaged. If the profile is set to No, then the delivery detail status will be changed to 'N' (Not Ready to Release) and reservations will be deleted. Note that you will lose the ability to track that this item was backordered and these items will not show up on 'backorder detail report' or 'backorder summary report.'

Order Changes

Topics covered in this chapter include:

- [Order Changes](#) on page 13-2
- [Processing Constraints](#) on page 13-6
- [Re-instituting Prior Processing Constraints](#) on page 13-8

Order Changes

Order Management provides you with the ability to automate the process of changing various types of orders. However, system and processing constraints can prevent specific changes to an order depending on the flow status.

The *Order Management User's Guide* provides a detailed description of the processing constraints.

Users can make changes to an ATO model line without delinking the configuration item:

- Change in Schedule Ship Date
- Change in Request Date/Scheduled Arrival Date
- Change in order line quantity
- Cancel order line
- Change the configuration

Attention: Order Management has a delete constraint that prevents the deletion of a line after booking. This will prevent you from being able to change the configuration of a model after it has been booked. This is a 'non-seeded' constraint that should be removed if you need to make changes to your configurations after booking.

Once a change is made, Order Management will try to reschedule the order with the changes. If rescheduling succeeds then system will store the changes, otherwise the system will not save the changes.

In case of a configuration change on a multi-level, multi-org order, or full cancellation, the system will delink the configuration item. Delinking the configuration item will unreserve the existing supply reservation, and will set the OM workflow status back to create configuration eligible.

For more information on de-linking a configuration, please see the De-link Configuration Item section in Chapter 7 of this document.

Note that the CTO change order process will not send notifications for drop shipped orders. The Order/Purchase Order Discrepancy Report, can be used to reconcile changes between the sales order and purchase order.

If you change the request date on a drop ship order before it is interfaced to purchasing, the scheduled ship date will not change. You must change the scheduled ship date manually.

Notification of the Change

For configured items and "make" ATO items, notification will be sent to the planner of the top model/item in the shipping organization. For purchase to order ATO items, a notification will be sent to the buyer on the requisition. The planner or buyer should be a valid workflow user. If the planner or buyer is not valid workflow user then notification will be sent to the SYSADMIN user by default. The default user can be customized by changing the Change Order Administrator attribute default value in the workflow. Please see the inventory user manual to know how to setup the planner code to an item.

For single level, single organization configurations and make type ATO items:

A notification of the changes made will be sent only if a reservation or flow schedule exists for the configuration. In the case of a configuration changes, a notification will be sent even if no reservation exists.

Table 13–1 Notifications in a Single Level, Single Organization Make Environment

Change	Always Send Notification	Send Notification only if Reservation /Flow Schedule exists
Schedule Ship Date	-	Yes, no change to reservation
Request Date/Scheduled Arrival Date	-	Yes, no change to reservation
Order Line Quantity	-	Yes, decrease reservation if qty decreases
Cancellation	-	Yes, remove reservation
Configuration Change	Yes, remove reservation	-
Manual De-link of Config Item	-	Yes, remove reservation

Note: The Order Line quantity increase will not result in a reservation increase. Users should run the appropriate create supply batch program to create more supply. Or, in the case of a work order, they could manually increase the quantity on the work order and then increase the reservation.

For multi level, or multi organization configurations and make type ATO items:

A notification of the changes will always be sent, whether or not a reservation exists for the top level configuration or ATO Item.

Table 13–2 Notifications in a Multi Level, Multi Organization Make Environment

Change	Always Send Notification	Send Notification only if Reservation /Flow Schedule exists
Schedule Ship Date	Yes, no change to reservation	-
Request Date/Scheduled Arrival Date	Yes, no change to reservation	-
Order Line Quantity	Yes, decrease reservation if qty decreases	-
Cancellation	Yes, remove reservation	-
Configuration Change	Yes, remove reservation	-
Manual De-link of Config Item	Yes, remove reservation	-

Note that these changes could cause data inconsistency between Order Management and WIP if action is not taken by the planner to update associated WIP jobs or flow schedules.

For purchased configurations and buy type ATO items, a notification of the changes will be sent to the buyer, if a reservation to a req or PO exists for the ATO item.

Table 13–3 Notifications in a Purchased Environment

Change	Always Send Notification	Send Notification only if reservation exists
Ship Date	Yes	no change to reservation

Table 13–3 Notifications in a Purchased Environment

Change	Always Send Notification	Send Notification only if reservation exists
Request Date	Yes	no change to reservation
Qty	Yes	if qty decreased/decrease reservation
Cancellation	Yes	remove reservation
Config Change	Yes	remove reservation
Manual De-link	Yes	remove reservation

Customization to Workflow

Customers will be able to customize the seeded workflow using Oracle Workflow Builder if they have special requirements. The notification message can also be customized.

Please see the *Oracle Order Management Workflow Guide* for more information.

Processing Constraints

Order Management still has some seeded processing constraints for configurations that deny certain actions when the workflow reached certain status.

ATO Model

For ATO Model order line, there are still processing constraints that prevent certain order changes.

After a configuration item is created, users cannot change the warehouse or delete the top model order line. You can cancel the top model by setting the quantity to zero or clicking Actions.

There is also an Order Management constraint that prevents cancellation or reduction in quantity of an ATO model line if the configuration line is interfaced to shipping and some deliveries are staged. This is a 'non seeded' constraint. If this constraint is removed then the staged lines can be canceled. It is recommended that you do not remove this constraint.

Users also cannot cancel any quantity on the model line that is associated with a closed delivery on the configuration line. However, if the configuration line is interface to shipping and there are no staged deliveries, but there are some closed deliveries, then the model quantity which is not yet closed can be canceled.

Option Items

There is a delete constraint that prevents the deletion of a line after booking. This will prevent you from being able to change the configuration of a model after it has been booked. This is a 'non-seeded' constraint that should be removed if you need to make changes to your configuration after booking.

Configuration Item

For the configuration order line, there is a processing constraint that prevents updating anything on the configuration line. To make changes to the configuration line's dates or quantities, change the ATO model line and the changes will cascade to the configuration item.

ATO Item

For ATO Item order line, there is a processing constraint that prevents the user from changing the warehouse after a work order, flow schedule, purchase requisition, or purchase order has been created and reserved to the ATO item.

There is also an OM constraint that prevents cancellation or reduction in quantity of an ATO item line if the line is interfaced to shipping and some deliveries are staged. This is a 'non seeded' constraint. If this constraint is removed then the staged lines can be canceled. It is recommended that you do not remove this constraint.

Users also cannot cancel any quantity that is associated with a closed delivery. However, if the line is interface to shipping and there are no staged deliveries, but there are some closed deliveries, then the unclosed qty in the order line can be canceled.

Remnant ATO Model Lines

All lines in a PTO Model can become remnant if the PTO model is partially shipped. Additionally, all lines will become remnant if any item under a non-ship model complete PTO Model is dropshipped and has been partially or fully received.

If you are using PTO-ATO Hybrids, you will not be able to change any of the following on the remnant ATO Model lines:

Request date, schedule ship date, schedule arrival date, quantity, or configuration. You also cannot delete and cannot invoke the configurator.

See the *Oracle Order Management User's Guide* for more information on remnants.

Re-instituting Prior Processing Constraints

Prior to 11i Family Pack E, Order Management had additional seeded processing constraints for configurations that denied certain actions when the workflow reached certain status. The original processing constraints are described here, along with details on how to re-instate them if your business requires them.

Prior ATO Model Constraints

For ATO Model order line, there were processing constraints that prevented certain order changes.

After a configuration item is created, these actions were not allowed:

- Increasing / Decreasing quantity
- Updating schedule ship date
- Modifying selected options (add or delete options)
- Canceling line

Prior ATO Item Constraints

For ATO Item order line, there were processing constraints that prevented certain order changes.

After a work order or flow schedule was created and reserved to the ATO item, these actions were not allowed:

- Increasing / Decreasing quantity
- Updating schedule ship date
- Canceling line

After ship notified of the ATO item, these actions were not allowed:

Updating scheduled ship date

Updating ordered quantity

Canceling order line

To re-institute these constraints

If needed, the above removed conditions can be added as a non seeded condition. The tables below are the exact conditions that were removed in OM Family Pack E. They can be added exactly as shown to keep the old functionality. Please refer to

Oracle Order Management User's Guide to know how to add conditions to the existing constraints.

Note that only the conditions were removed in OM Family Pack E. The validation templates for those conditions are still available to use.

Table 13–4 Cancel Constraint

Operation	Attribute	User Action
CANCEL	-	Not Allowed

Table 13–5 Cancel Constraint Conditions

Group	Scope	Validation Entity	Record Set	Validation Template
6	Any	Order Line	Line	ATO
6	Any	Order Line	Line	Ship notified
6	Any	Order Line	Line	Standard item
7	Any	Order Line	Line	Configuration Created

Table 13–6 Update Ordered Quantity Constraint

Operation	Attribute	User Action
UPDATE	Ordered Quantity	Not Allowed

Table 13–7 Update Ordered Quantity Constraint Conditions

Group	Scope	Validation Entity	Record Set	Validation Template
6	Any	Order Line	Line	ATO
6	Any	Order Line	Line	Ship notified
6	Any	Order Line	Line	Standard item
8	Any	Order Line	Line	Configuration Created

Table 13–8 Delete Constraint

Operation	Attribute	User Action
DELETE	-	Not Allowed

Table 13–9 Delete Constraint Conditions

Group	Scope	Validation Entity	Record Set	Validation Template
3	Any	Order Line	Line	Configuration Created

Table 13–10 CREATE Line Constraint

Operation	Attribute	User Action
CREATE	-	Not Allowed

Table 13–11 Create Constraint Conditions

Group	Scope	Validation Entity	Record Set	Validation Template
3	Any	Order Line	Line	Configuration Created

Table 13–12 Update Scheduled Ship Date Constraint

Operation	Attribute	User Action
UPDATE	Schedule Ship Date	Not Allowed

Table 13–13 Update Scheduled Ship Date Constraint Conditions

Group	Scope	Validation Entity	Record Set	Validation Template
2	Any	Order Line	Line	ATO
2	Any	Order Line	Line	Ship notified
2	Any	Order Line	Line	Standard item
4	Any	Order Line	Line	Configuration Created

Customize the Order Processing Workflow

This chapter provides information on:

- [Customize the Order Processing Workflow](#) on page 14-2
- [ATO Model Workflow](#) on page 14-2
- [Configuration Line Workflow](#) on page 14-3
- [ATO Item Workflow](#) on page 14-4

Customize the Order Processing Workflow

Details of the OM workflows used by CTO can be found in the '*Using Oracle Workflow in Oracle Order Management Guide*'. This chapter is meant to provide you with additional details on customizing the workflows if it is needed by your business.

The ATO Model Line, the Configuration Line, and the ATO Item workflow can be customized by adding blocks or approval activities or by removing some optional blocks and activities.

ATO Model Workflow

The following table shows all the activities in the ATO Model line workflow are mandatory.

Table 14–1 ATO Model Mandatory Workflow Activities

ATO Model Line Workflow Activity	Mandatory	Comments
Enter Line	Yes	-
Schedule Line	Yes	-
Create Configuration Eligible	Yes	-
Create Configuration	Yes	Creates item, BOM and routing
Wait for CTO	Yes	-
Line Level Invoice Interface	Yes	-
Close Line Process	Yes	-

Configuration Line Workflow

This table summarizes which activities in the Configuration Line workflow activity are mandatory and which are optional.

Table 14–2 Configuration Line Workflow Activities

Configuration Line Workflow Activity	Mandatory	Comments
Wait for Create Configuration	Yes	This block activity is automatically completed by the Model workflow after the configuration item is created.
Calculate Cost Rollup	No	-
Calculate Lead Time Process	No	-
Calculate Purchase Price	No	-
Create Supply Order Eligible	Yes	-
Check Supply Type	No	Not Required if routings for all models and ATO items are only Discrete routings or flow routings and ATO models and ATO items are not purchased.
Create Work Order Process	No	Not Required if Routing of all models used is flow routing
Create Flow Schedule	No	Not Required if Routing of all models used is discrete routing.
Autocreate Req	No	Not required if ATO models and ATO items are never purchased.
Purchase Release, Line - Deferred	No	Not required if you will never dropship an ATO model or item.
Wait for PO Receipt	No	Not required if ATO models and ATO items are never purchased.
Ship Line	Yes	-
Fulfill Line	Yes	-
Close Line	Yes	-

Block activities cannot be added inside the Create Manufacturing Configuration Data process and the Create Supply Order process.

ATO Item Workflow

This table summarizes which activities in the ATO Item workflow activity are mandatory.

Table 14–3 ATO Item Workflow Activities

ATO Item Line Workflow Activity	Mandatory	Comments
Enter Line	Yes	-
Schedule Line	Yes	-
Create Supply Order Eligible	Yes	-
Check Supply Type	No	Not Required if routings for all models and ATO items are only Discrete routings or flow routings and ATO models and ATO items are not purchased.
Create Work Order Process	No	Not Required if Routing of all models used is flow routing
Create Flow Schedule	No	Not Required if Routing of all models used is discrete routing.
Autocreate Req	No	Not required if ATO models and ATO items are never purchased.
Purchase Release, Line - Deferred	No	Not required if you will never dropship an ATO model or item.
Wait for PO Receipt	No	Not required if ATO models and ATO items are never purchased.
Ship Line	Yes	-
Fulfill Line	Yes	-

Block activities cannot be added inside the Create Supply Order process.

Note that activities marked as No in the mandatory column in both the above tables have to be removed from Create Supply Order process. The Create Supply Order process is used in both Configuration line workflow and ATO item workflow and hence changes to this process will affect both the line flows.

Deactivating Configuration Items and Purging Data

This chapter provides information on:

[Deactivate Configuration Items](#) on page 15-2

[Order Purge](#) on page 15-5

[Purge Match Tables](#) on page 15-5

Deactivate Configuration Items

Bills of Material enables you to automatically deactivate item numbers associated with deactivated configuration orders. You can also deactivate configuration items to remove them from item master reports and screens before you actually purge them from the database. Deactivating a configuration from all organizations also removes it from the match tables, so that new orders will not match to a deactivated configuration.

When you set up Inventory and Bills of Material, you can define an item status to identify deactivated configuration items. You can use this status to disable the configuration item from all Oracle Manufacturing functions. You would normally specify No for each of the following item attributes for inactive configuration items:

- BOM allowed
- Build in WIP
- Transactable
- Stockable

When defining bills of material parameters, specify the item status to use for deactivated configuration items. See: Defining Bills of Material Parameters.

All configuration items that meet the following conditions will be selected for deactivation:

No Open Demand

There should not be any open demand for the configuration item (in context organization). Open demand is identified by open sales orders and planned orders. Future demand (demand in interface tables) will also count as demand.

No Open Supply

There should not be any supply created for the configuration item in current organization (i.e. Organization where deactivation process is run). Open supply is identified by discrete jobs, flow schedules and inventory reservations.

In the case of a cancellation or de-link, there might be supply created for the configuration item in another organization with no demand associated with it in this organization. In this case, we will deactivate the configuration item in this organization.

Example:

Item C*1 is sourced in organization O1 from organization O2.

There is sales order demand in O1 and planned order demand in O2. A work order for C*1 is created in O2.

Now, the order is canceled and demand for C*1 is removed from organizations O1 and O2.

If the Deactivation process is run in O1, we will find no demand for C*1 in any organization, and no supply in organization O1. Even though there is open supply in organization O2, the item will be deactivated in organization O1. The item will not be deactivated in organization O2.

We will only deactivate the item in the organization where the program is being run. This is because the same item could be enabled in other organizations due to different reasons:

As a result of the Create Configuration process, in the case of a multi-organization configuration.

Enabled manually to be used as a pre-defined ATO Item in other organizations

If the item needs to be deactivated in all organizations, the 'Deactivate Configuration Items' process needs to be run in all organizations

No Material Transactions

There should not be any material transactions in current organization for the item 'n' days before the Deactivation process is run. 'n' is defined by the input parameter 'Number of Days.' Hence, if we find any material transactions for the item in the last 'n' days, the item will not be deactivated.

Material transactions for a configured item include WIP, Sales Orders, and Internal Orders transactions.

Material transactions will be checked only in the organization in which the program is run.

No On Hand

Items will not be deactivated in an organization if there is any on hand in that organization.

Does Not Exist in Child Organization

For any organization, child organizations may have been setup. If the item is available in the child organization then, that item will not be deactivated in the master organization.

Does Not Have a Common BOM and Routing

The items (to be deactivated) BOM and Routing should not be commoned by any other item which is currently active. If it is then item will not be deactivated.

You can run the Deactivate Configuration Items concurrent program to automatically deactivate all configuration items that have no open sales orders or on-hand inventory, and whose most recent sales order shipped more than the number of days ago you specify. Each deactivated configuration item has its status updated. Deactivated configurations are removed from the matching tables, so that future configurations cannot match to deactivated items.

To deactivate configuration items:

1. From Bills of Material menu, navigate to the Submit Requests window.
2. Select Report and select Deactivate Configuration Items.
3. Enter the organization for which you want to deactivate configuration items that were completed and shipped more than the number of days ago you specify.
4. Enter the shipped number of days ago. Configuration items completed and shipped more than this are deactivated. The default is 90.

Note: You can delete item information for deactivated configurations from the database, including the bills of material and routings. The ability to delete configuration items is subject to the same deletion constraints that operate for other item types as well.

See Also: Deleting Items, Bills, Routings, Components, and Operations.

Order Purge

In Release 11*i* CTO tables are populated during scheduling of an order and creation of configuration item. When user runs a Order Purge program of Order Management, related data of an order inserted in CTO Tables are also purged.

Purge Match Tables

If the profile BOM: Match to Existing Configurations is on, the table bom_ato_configurations is populated every time a new configuration is created so that if similar configuration is created in future, the configuration item can be matched from this table. If it is not purged of old data, this table can grow very large and might affect the Match and Reserve performance.

This table is purged automatically anytime you deactivate a configuration item through the process described earlier in this chapter. However, it is also possible to remove specific items from the table before it is deactivated by running the Purge Configuration Items concurrent program. You may want to do this on items in which you want to process existing sales orders for the item, but you do not want to take any new sales orders for the item.

To purge specific configurations:

1. From Bills of Material menu, navigate to the Submit Requests window.
2. Select single request and select Purge Configuration Items.
3. Enter the criteria for the items that you want purged from the table:
 - Base Model: All configurations generated from a specific base model are purged
 - Configuration item: A specific configuration is purged
 - Item Created Days Ago: Configuration items created earlier then sysdate minus this number are purged
 - Last Referenced Days ago: Configuration items that were last matched before sysdate minus this number are purged
4. Enter the shipped number of days ago. Configuration items completed and shipped more than this are deactivated. The default is 90.

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